

Children's Newspaper

Have You Seen
My Magazine?

The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

The Story of the World Today for the Men and Women of Tomorrow

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EDITED BY ARTHUR MEE

Ready Every Friday 1½d

A NEW LEASE FOR THIS OLD EARTH

HOW LONG CAN EARTH GO ON? NEW HOPE COMES FROM THE SKIES

More Heat in the Sun than
Anybody Has Imagined

HOW THE STARS GET THEIR ENERGY

Everything we learn of the universe makes it more wonderful still. We have been told that the life of the sun could not last long, and that in a few million years the whole earth must perish of cold; but Professor Eddington of Greenwich Observatory has been telling the British Association that he does not believe it, for very good reasons.

Young and old, we have all been taught to believe that the sun and other heavenly bodies generate their heat by slowly contracting, and that by the conversion of energy into heat the sun reaches a temperature of 6000 degrees, and some of the larger and more distant suns a temperature half as high again.

This theory supposes the sun to be 20 million years old, and to have been contracting all the time. A law for our sun should be a law for other suns, too; but observation of other stars does not support this generally-accepted belief. If a star is contracting its density should alter, and alter at rates which astronomers can definitely calculate.

Old Theory Out of Date

Well, the Cepheid stars have been under continuous observation since 1785, and the conclusions drawn from these observations are vastly different from what the theory of heat from contraction demands. There must be some source of energy in the stars which prolongs their life 400 times the length which this theory has taught us to expect.

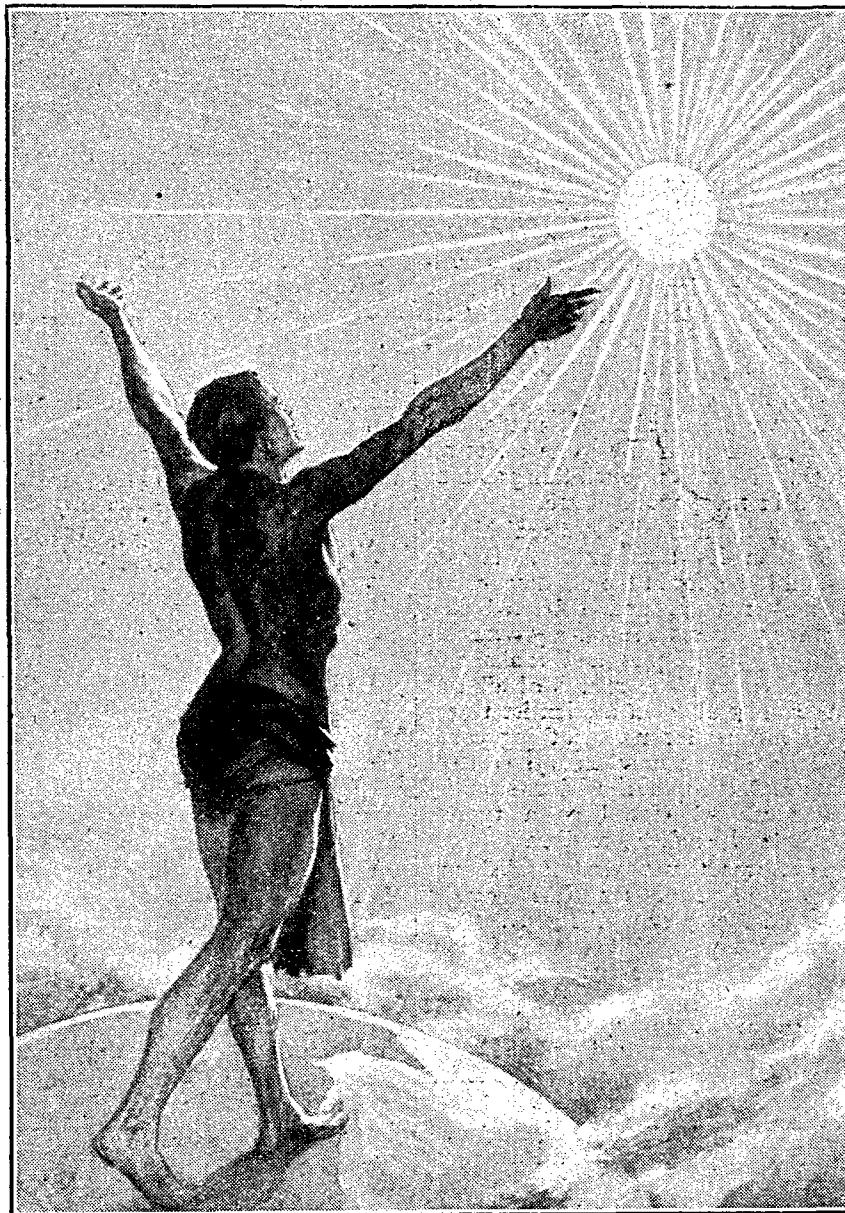
In view of this and other facts Professor Eddington boldly opposes the contraction theory. It is all wrong, he says, and would not have the smallest chance of acceptance if newly propounded today. We inherit the belief in it, but it proves hopelessly inadequate to explain the heat spent during the time of a sun's evolution.

No Fear for the Earth

The stars are drawing on vast reservoirs of energy by means unknown to us. What is that energy? It is, says our professor, energy within the atoms which exist abundantly in all matter. It is that energy locked up in the atom which science is trying to release for the service of the world.

And here comes a wonderful possibility. If the old theory of heat from contraction is wrong, and the belief in the almost certain existence of this mighty imprisoned force is correct, then there is sufficient of that energy in the sun to maintain our life-sustainer's present output of heat for 15,000 million

All Hail, Thou Glorious Sun



The Conqueror of the Earth greets the Sun, the source of life, which it is now believed will endure upon the earth for at least 15,000 million years

years! We need not fear a frigid earth strewn with the frozen dead.

Recent investigations led Mr. Eddington to believe that some portion of this atomic energy is being released in the stars. All the elements, he holds, are constituted out of hydrogen atoms bound together with negative electrons.

The nucleus of a helium atom, for example, consists of four hydrogen atoms bound together with two electrons. But the mass of the helium atom is less than the mass of all the four hydrogen atoms which enter into it, and in this change there is a loss of about one part in 120.

Now, mass cannot be annihilated, and the loss can only represent the mass of the electrical energy set free in the combination. We can therefore calculate the quantity of energy liberated when helium is made out of hydrogen.

But is it possible, we all want to know, that this marvellous change is taking place, and providing this boundless energy? Professor Eddington is confident. Sir Ernest Rutherford, he says,

has recently been breaking down the atoms of oxygen and nitrogen, so driving out helium from them, and what is possible in the Cavendish Laboratory may not be too difficult in the sun.

To Professor Eddington the stars are crucibles in which the lighter atoms are compounded into a great variety of the more complex elements which are needed for a world of life. And he urges that if combinations requiring the addition of energy can occur in the stars, combinations which liberate energy ought not to be impossible.

There we must leave a thrilling and entrancing subject, with this thought—that the sun will continue for unthinkable ages to warm and vivify this earth, and that by pondering the mysterious processes of the distant stars we may bring the greatest of all material secrets to earth for the service of a weary world. "Star-gazer" ceases to be a term of ridicule and reproach. The star-gazer may become, indeed, the mainspring of all our human activities.

MAN WHO LIVED IN A GLASS BOX

SHUT OFF FROM THE SOURCE OF LIFE

Why We Must Keep Our
Windows Open

WHAT MAY DEPEND ON A BREATH OF FRESH AIR

Men of science often talk in terms not understood by ordinary mortals, but Professor Barcroft, President of the Physiological Section of the British Association, has made it possible for even children to draw an important lesson from his address to that learned body.

The address dealt with a condition termed anoxaemia, which means the state of the body when it is insufficiently supplied with oxygen. Reading what the professor said one wants to rush into the open and breathe draughts of pure air.

Blood, to be purified, must have oxygen. Pure air may be "held" by the lungs for two minutes; air without oxygen cannot be retained more than half a minute.

Bad Effect of Bad Air

A man drowns in the water for lack of oxygen; a man on a mountain-top feels sick and weak for lack of oxygen; a man still higher in an aeroplane may faint and become paralysed from the same cause, drowned in a cloudless sky.

Professor Barcroft has lived for six days in a glass box in which the supply of oxygen was greatly reduced, but he is modest in dealing with his experiences.

He does, however, tell us of his sickness, his headaches, his almost automatic actions. He agrees that lack of oxygen produces upon the brain effects resembling drunkenness. He found that, contrary to medical opinion, the lungs do not clutch at the reduced quantity and force it into the blood. The pressure remains low, and is not made good.

The Key to Existence

Impure air, air insufficiently charged with oxygen, makes us evil-tempered and incapable of exertion. At a great height, where the pressure of air is low and the quantity of oxygen is small, a man, merely to keep alive, has to make as great exertions in breathing as he would need for heavy work at a lower height. As one said who slept on a high mountain, "So great was the effort that we thought twice before we turned over in bed."

We say that the blood is the life, but oxygen is the life of the blood—the key to existence which any of us may possess if we will breathe deeply in the open, and admit the sovereign gift into our houses through open windows.

Without it we wreck the finest machinery in the world, the brain that moulds the destiny of mankind. Who knows when the fate of an empire may not depend on a breath of fresh air, the salvation of a home on an open window?

THE LIFE BRIGADE 25,000 BOYS OF THE RIGHT SORT

Great Army of Youth Comes
Into Its Majority

BUILDING UP CITIZENSHIP

That excellent institution the Boys' Life Brigade has "come of age" at Birmingham, where its twenty-first annual meeting is being held.

It was in 1899 that the Brigade was brought into existence by the fertile mind of Dr. J. B. Paton, of Nottingham, a social thinker and worker who probably originated more good and practical schemes than any other man of his generation. Schoolboys will be interested to know that he was the father of that friend of all boyhood, the headmaster of Manchester Grammar School.

The Brigade's "majority" meeting will have in the chair as its President the eminent doctor Sir Alfred Pearce Gould, a splendid friend of good causes, and a membership of 25,000 boys and 2000 officers will be represented there.

The idea of forming the Life Brigade occurred to Dr Paton as he watched a schoolmaster drilling his boys without weapons, teaching them how to save life rather than destroy it.

A frankly religious spirit is its first noble aim. It promotes many useful and delightful objects, but bases them all on a desire to serve God and man. Each member must attend a Sunday school or a Bible class, and be a total abstainer.

Its motto is "To save life," and with that aim the members are trained in life-saving from fire, drowning, and other accidents.

First aid and swimming are given a foremost place in the instruction, but physical drill, games, scouting, signalling, and nature study, with week-end and summer camps, route marches, and field days, play a prominent part in the round of duty.

Badges of three classes are awarded as increasing efficiency is shown, and the lad who wears the first-class badge has mastered a thoroughly practical training.

It is with much pleasure that we call attention to the fine programme and splendid record of this most admirable institution founded by our old friend Dr. Paton, who loved the spirit of this paper, and whose work lives after him.

WISE MAN AND HIS GRAVEL PIT Orchard From a Rubbish Heap

A remarkable instance of the use of waste material may be seen at Chelmsford. The material used is waste ground.

Fifteen years ago there was a deep, empty gravel pit, useless to everybody, apparently, except as a refuse tip for soil and rubbish, and to that base end it was put.

Then it occurred to the owner that if he sloped the sides they would catch the sun and the surrounding drainage. So he slanted the sides over the hidden gravel, and planted an orchard, three-quarters of an acre in size, and dipping down fifty feet into the centre.

Now there are 550 trees in that rounded pit, producing, two or three weeks earlier than elsewhere, a fine crop of plums, pears, apples, cherries; and gooseberries, besides an equally prolific crop of saleable flowers, and what was a desert blossoms and rejoices.



A Boy of the
Life Brigade

Kings from Slaves & Slaves from Kings ROMANTIC HISTORY OF THE HUMAN RACE

How All Peoples, All Nations, and All
Tongues Meet in Our British Race

THE EXTRAORDINARY ANCESTORS OF CHARLES DARWIN

In the days of the old aristocracy, before the French Revolution had proved that class and caste and the enslaving of the poor by the rich are as monstrous as the tyranny of kings, a little son of an exalted house of France had a great disappointment.

Pricking his chubby finger, he was deeply mortified to see that his blood was red; he had been taught that it was a noble blue, the "blue blood of aristocracy," as it is called.

He and his family could not be expected to know the simple physiological fact that blood is red when it is pure, that impure blood, returning by way of the veins to the heart, is purified and reddened as soon as it is brought in contact with air. But that rule holds good of rich man, poor man; beggar man, thief, as our song runs.

Mingling of the Peoples

For we are all similarly made, and all descend from the same ancestral stock. There is no such thing as blue blood in the popular sense.

The human family is astonishingly mixed in its relationships. It was bound to be, for in the old days, when nations roamed and scattered like holiday parties, there was a great mingling of peoples and ranks and social strata. The results of all this are wonderful when a scientist traces their history for us. Nothing could better point the moral than the case of Charles Darwin, the illustrious scientist whom we all regard as a typical example of English breeding.

How was this typical Englishman made up? Professor Karl Pearson has told the story of the great man's ancestry to the British Association. We seek in vain for "purity of race" in Darwin's pedigree. He was descended in four different lines from Irish kings; he was descended in as many lines from Scottish and Pictish kings. He had Manx blood.

Darwin Among the Vikings

He claimed descent in at least three lines from Alfred the Great, and so linked up with Anglo-Saxon blood, but he linked up, also, in several lines with Charlemagne, who reigned 1100 years ago; with the Saxon emperors of Germany; with Barbarossa, the Christian King who led a crusade against Saladin. In Darwin's veins ran the mixed blood of Vikings and Normans, of Bavarians, Flemings, and Franks. He traced back to the Hun rulers of Hungary and the Greek emperors of Constantinople, and, if Professor Pearson is right, back to the

half-genius, half-monster, Ivan the Terrible of Russia.

That was our gentle Darwin, descendant of world-rulers and mighty barbarians; of kings in an Ireland which was one of the last strongholds of European learning, of an emperor who converted the savage warring kings and tribes of Europe to Christianity; of painted royal warriors who fought the Romans in Britain 2000 years ago. Five hundred generations, exalted and lowly, benevolent and fierce, inspired and brutish, culminated in a lovable old philosopher on his Kent hill-top. Pride of race was nothing to him; so modest was he that he marvelled that a statesman should go six miles to visit him.

One Common Root

If one had reminded him that he had kings among his ancestors he would probably have replied that every king has a slave among his ancestors. We are all descended from kings and serfs.

When Adam delved and Eve span,
Who was then the gentleman?

The hundred currents which mingle to provide the life stream of a single individual have their counterpart in the blood of a nation.

When we talk of nationality we forget that there can be no such thing as this so-called purity of race, unless we absolutely isolate a nation for a thousand years. All living races trace back to one common root.

Help from a Volcano

We are like a garden, for the making of which a thousand things are necessary. Our roses spring from the pulverised bones of bison that once roamed the prairies of America. Our strawberries and tomatoes ripen and redden under the influence of nitrates gathered from a barren land.

We drive mildew from foliage and flower with sulphur gathered from the throat of an extinct volcano; and we fertilise cornfield and orchard with the fossil remains of meals eaten by gigantic animals of the long ago, when the earth was possessed by reptiles.

Dead and sceptred kings live again in the blood and character of the man with whom we rub shoulders in the street. The Phœnicians, the Carthaginians, the Babylonians, the Assyrians, and all the forgotten races survive unrecognised in the nations of the twentieth century. Empires crumbled, the names of their peoples linger only in history, but their blood courses through human hearts today.

GREAT MAN OF INDIA'S RISE TO POWER

Lord Sinha, the newly-appointed Governor of the Indian province of Bihar and Orissa, and the first Indian to attain the position of Governor in his native land, has won many honours during his career; but none is greater than the universal congratulations poured on him by the British Press.

Lord Sinha has been the first Indian to do many things. As a student of law in England he won nearly all the prizes.

He was the first Indian to be permanent legal adviser to the Government of India;

the first to be a member of the Viceroy's Executive Council; the first to sit as a member of the War Conference and the Peace Conference; the first to be made a peer; the first to be Under-Secretary of State for India in the British Parliament; and now he is the first Indian Governor of an Indian province.

No man of his race has won greater confidence, and to him the British Empire looks to interpret the good intentions of Great Britain towards the eastern part of our far-flung Commonwealth.

THE JOLLY MILLER AND HIS JOURNEY THROUGH THE CENTURIES

A Bit of Old Rome in a Putney
Garden

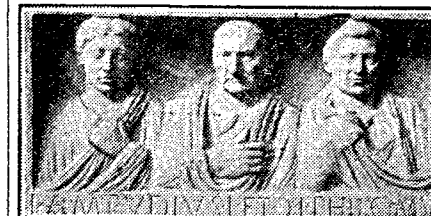
A QUEER TRAVEL TALE

Who is the jolly miller, with his wife and son?

For centuries he has been coming down to us on his way to the Children's Newspaper. He set out, perhaps, about the time of the birth of Jesus.

The portraits in marble form the latest antiquity to arrive at the British Museum, and they have had an extraordinary journey there.

Originally the portraits were built, experts think, into the walls of a tomb in Italy. Then they were placed face



The Jolly Miller, with His Wife and Son

downwards in the earth, and walked over by the feet of many generations as a paving-stone.

As the marble wore thin the sculpture was discovered on the under side, and it was taken up about two hundred years ago. But rather more than a hundred years ago it was lost.

Apparently it had been bought by some Englishman and conveyed to London. Then it passed into a contractor's stone-yard in St. John's Wood, and remained there about half a century.

There Mr. Dixon, a landscape gardener of Putney, saw, admired, and bought it, and removed it to his own garden.

His admiration of it grew until he thought he ought to consult the British Museum authorities about it, and they succeeded in tracing its history as it is here set out, whereupon he generously gave it up to the Museum.

Works of art have often passed through strange changes in ownership, but none of their travels can be much more curious than this carved tablet, erected originally to the memory of "Lucius Apudius Philomusus, the freedman of Lucius Apudius," and now to be seen in the heart of throbbing London.

DEPRESSIONS

What They Mean in the Weather Forecasts

We have lately heard a great deal about "depressions," for several times the weather forecasts informed us that depressions were advancing from Ireland or from the Atlantic. And the depressions certainly were depressing, for they always brought rain. But what are depressions, and why should they bring rain?

The great sea of air which is spread over the surface of the earth is not always spread evenly, and at times in places it thins out. Such a thinning out is a depression, shown by the sinking of the column of mercury in a barometer tube owing to the lighter weight of the air overhead. The pressure of the atmosphere is always on the short arm of the barometer, so that lighter air means a fall of the mercury in the long arm as it rises in the short arm.

That is what a depression is, and it brings rain because there is always a rush of air swirling up to fill the depression, and as the air ascends it expands, and in expanding it cools, and in cooling it condenses and gives up any moisture it contains.

We see the same principle if we watch the steam of an engine. When the steam comes out of the funnel it is invisible, and apparently dry, but as it ascends it expands and cools, and becomes visible as a white cloud of moisture.

HARD TIMES FOR CATS

PUSSY AND THE FOOD SHORTAGE

Dick Whittington at the Docks

THE SWARMING RATS OF THE THAMES

Another serious shortage of food is announced; this time of horseflesh; and already there is much concern in cat-land; for horseflesh is pussy's favourite food, and she prefers it to the choicest cuts of beef and mutton.

Probably this is only an acquired taste, due to the fact that beef and mutton have always been too much in demand for humans to be wasted on cats, and in Britain, at any rate, there was no use for horseflesh except as cats' meat.

Now, with the coming of the motor-car and the decrease in the number of horses, together with the growing demand for horseflesh for human consumption on the Continent, the supply available for puss is getting less and less. In fact, the cats' meat man may become as extinct as the dodo.

Too Lazy to Hunt

This falling-off in food supply is a serious matter for the cat. A carnivorous animal must have flesh of some kind, and, though there are rats and mice in plenty, these cannot always be caught by cats; they have become tame and lazy through human care.

Town cats may take it into their heads to prefer a bird diet, which would be very sad, for already the wild life of our cities is scarce enough, and any diminution, even of sparrows, would be most regrettable.

The biggest buyer of cats' meat at the present time is that modern Dick Whittington, the Port of London Authority, which spends £500 a year in this way. Even then the cats owned by this official body do not fare sumptuously, for only sufficient food is given to keep them attached to the spots where they are wanted, namely, the wharves and warehouses of the docks.

Cats Better than Traps

The riverside districts of London swarm with rats, and the dock authorities encourage stray cats, which have grown more or less wild and fierce, to take up their abode among the wharves. There, with a meagre ration of cats' meat, they find it necessary to hunt in order to supplement their diet. Being half wild, they are not afraid of the biggest rats, and become intrepid and skilful hunters, slaying many thousands in a year.

They beat all the traps, and were it not for their untiring efforts the ten million rats of London might soon become a hundred million, for two rats with their children and grandchildren grow to as many as 850 in a year. Some of the rats round the docks are enormous, one having weighed two pounds.

Cats are not fond of getting wet, but occasionally they are found catching fish in ponds and streams, and several cases of angler cats have recently been reported from London districts. Is the shortage of cats' meat leading the cat to follow the habits of the otter and become a fish hunter?

MOTHER AND DAUGHTER

The Family Feeling in Cows

An East Riding reader tells the following animal story.

A farmer who retired sold to two men two cows, a mother and daughter.

Every year people let their cows go into the lanes to graze, and the two cows are now about half a mile apart. But every morning the daughter cow can be seen going to meet the mother cow, and then they go to the grazing lane where they are allowed to stray.

If the mother cow has gone along to the lane first the other seems to know as if by instinct.

OLYMPIC WORLD CHAMPIONS



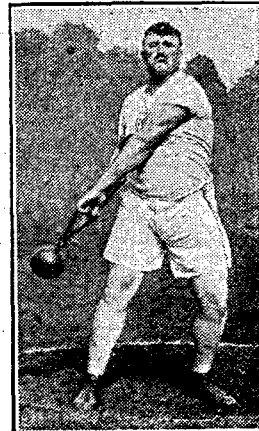
The City of London Police Team Winning the Tug of War



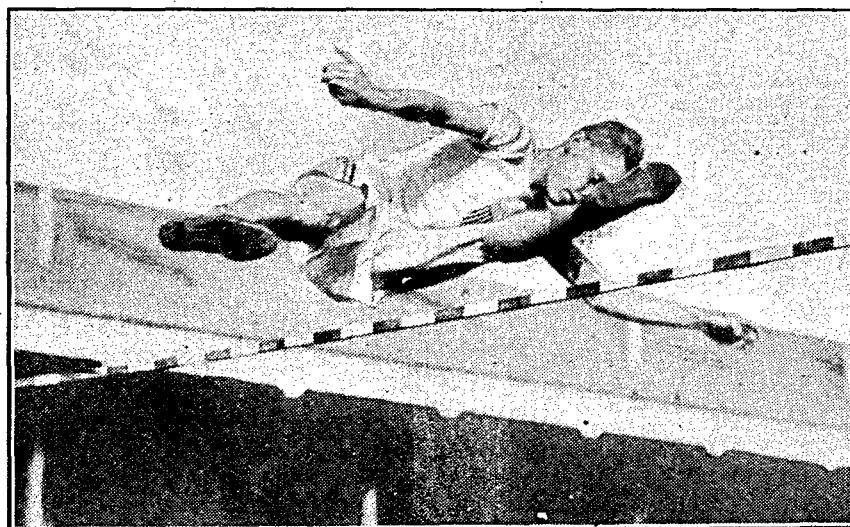
Porolla of Finland Putting the Shot



Thomson, Canada, Wins the 100 Metres Hurdle Race



MacDonnell of the U.S.A. Throwing the Weight



Richmond Landon of the United States in the High Jump



Patrick Ryan of the U.S.A. Throwing the Hammer



Kohlehmäinen of Finland Winning the Marathon Race



Petersen of Sweden Taking the Long Jump



Percy Hodge of Great Britain Clearing the Water Jump



Jonni Myyry of Finland Throwing the Javelin

These are some of the champion athletes who gathered from all parts of the world to take part in the great Olympic Games at Antwerp

SPLENDID PEACE USE FOR WARSHIPS

THE FIGHT AGAINST DISEASE

Floating Laboratories to Help the Farmer

DARWIN'S FIVE YEARS AT SEA

A splendid new use for old warships has been found. The Admiralty is placing them at the disposal of the Ministry of Agriculture for the purpose of fighting the dreaded foot and mouth disease which causes such havoc among cattle.

The warships are to be converted into floating laboratories, fitted with every modern appliance and apparatus for investigating the disease and carrying out experiments to combat it.

The disease is a very deadly one, involving the loss of hundreds of thousands of pounds every year, and leading to the closing of markets and the stoppage of trade. It is felt that investigation on ships at sea will be much safer than similar work carried out on land, and this time there is to be war to the knife until the enemy is utterly destroyed, or so crippled that it can never again be the menace it has been.

Warships to be Sunk

Some of the most brilliant living scientists are to carry out the work on the health ship, and they hope that before they set foot on land again they will have discovered some really effective method of combating foot and mouth disease. It is even suggested that when the investigations and experiments have been completed the old warships shall be sunk at sea, so that there may be no risk of their bringing the disease into port again.

This is not the first time that British warships have been used for scientific purposes. Some of the greatest and most valuable researches into physical phenomena have been carried out by expeditions on warships.

Book with a Great Idea

The most famous instance is that of the Beagle, in which Darwin made his celebrated and fruitful voyage round the world. She was a ten-gun brig, and the object of the expedition was to complete the survey of Patagonia and Tierra del Fuego, begun some time earlier, to survey the shores of Chile and Peru and some of the Pacific Islands, and to carry out a big series of time measurements right round the world.

It was the investigations of Darwin on this voyage that led to the "Origin of Species," and the mighty change which that book with a great idea wrought in the world's thinking about life and creation.

Then there was the almost equally famous Challenger expedition, which set out in 1872 and returned with an enormous wealth of information in 1876. This vessel was a main-deck corvette, a wooden ship of war with one tier of guns, and, though she was a sailing vessel, she was fitted with steam as an auxiliary.

Studying the Sea

The object of her cruise was to investigate scientifically the physical conditions and natural history of the deep sea all over the world, and for this purpose she was supplied with sounding and dredging apparatus, and carried an able scientific staff.

It was a fine use to which to put a warship, and probably the Challenger expedition resulted in a greater increase of knowledge with regard to the sea than has been the case with any other expedition that has ever been made.

Then, again, British warships have often been used for Arctic expeditions; and the United States and other countries have also allowed their warships to be used for peace purposes. Perhaps one of the best examples was that which we saw recently, when the American Boy Scouts attending the great Jamboree were brought across the Atlantic on a warship.

THE GREAT FLOWER OF KEW

HOW IT INSPIRED THE CRYSTAL PALACE

Curious Travellers Across the Ocean

AND THE PARENT OF THE "TUBES"

One of the sights of the world is the Victoria Regia lily, a giant which grows in water, spreading its leaves nearly three yards in diameter on pond or pool, in such massive strength that each leaf can bear the weight of three men. It has just been blooming at Kew, and it is timely to recall something of the romance attached to this floral monster.

It was the model of the Crystal Palace. There is no obvious resemblance between the plant and the building until we see the under side of the leaf. In order that this may happen two men have to wade into the tank, place a board beneath the leaf, raise it out of the water, and turn it over on its supple leathery stalk. Then is seen with what wonderful lightness the great leaf is constructed, how its under side is scored into deep recesses, and the whole leaf held together by a beautiful system of vegetable girders and ties.

Copying a Leaf

Sir Joseph Paxton, the Duke of Devonshire's gardener, carried out the principle of the leaf in glass and iron. The plan of the innumerable light steel girders and ties which form the Crystal Palace was copied entirely from the leaf of this Victoria Regia lily, which had been introduced into England from South America a few years earlier.

Some years ago the authorities noticed that the leaves were jagged and contained holes, and they blamed the goldfish which shared the pond with the plants. But an observant gardener pointed out that only leaves which bore a sort of fungus were attacked by the goldfish, and then nowhere but where the seeming fungus grew. He was right as to the fishes' conduct, but was he right in describing the growth as fungus?

Jellyfish at Kew

We all thought that jellyfish lived nowhere but in the sea. But the Victoria Regia proved, to the great astonishment of scientists, that there are fresh-water jellyfish; and there in the pond they were. They had clung to the plants at home, crossed the Atlantic with them, and bred here in London.

The discovery was one of the most startling in the history of animal travel. Creatures which perish in salt water had crossed the ocean and colonised a new territory. A Dutchman would shiver at the thought, for once another of these ocean travellers nearly destroyed his native land.

When Holland became possessed of the East Indies, she carried on her rich commerce in little wooden ships, and these, when in warm eastern waters, were attacked by multitudes of what we call shipworms, a mollusc named the teredo, which tunnels woodwork. The little wooden ships came and went with their riches year after year, when suddenly wealthy Holland found that she was literally collapsing at home.

Holland in Peril

The shipworms from the East had left the ships and settled on the piles and timbers of the dykes and dams of Holland. They were eating the Dutch defences into ruin, and it required a national effort to dislodge them.

Holland's peril was our lesson. Brunel copied the method of this wood-tunneller in building the first tunnel under the Thames, and the newest devices for driving a way through loose, under-water soil still embody the lesson of this terrible mollusc. It lines its tunnel, as it goes, with a hard, living substance; we line our tunnels in the earth beneath water with a coating of masonry or metal. The teredo is the parent of all our tube railways! *Photograph on page 12*

FACING GERMS OF DEATH

Men Who Tried to Catch Disease

HOW WE LEARN TO CONQUER INFLUENZA

By Our Medical Correspondent

No braver men ever lived than the American volunteers who, 27 years ago, in the interests of humanity, allowed themselves to be exposed in all possible ways to infection by the deadly disease of yellow fever.

They slept in blankets and sheets soiled by yellow fever patients; their pillows were covered with towels soaked in the blood of these patients; and for many weeks they endured ghastly and trying ordeals just to prove the precise way in which the disease is infectious. They *did* prove it, for 12 of those who had allowed themselves to be bitten by mosquitoes, which had previously sucked the blood of yellow fever cases, contracted the terrible disease, and one of them, Dr. Lazear, died.

Almost as brave were the American volunteers who last year exposed themselves to infection by influenza. Influenza may not be such a horrible disease as yellow fever, but it is dangerous and deadly, and in the epidemic of 1918 it slew millions.

To this dangerous disease men voluntarily exposed themselves for the sake of science, and it makes one shudder to hear of the perils they ran. Millions of the microbes of influenza were sprayed into their nostrils and throats, and they were instructed to breathe deeply so as to inhale them.

Some of the volunteers got very severe sore throats and some got influenza, and, though happily none died, every one risked his life. It probably requires as much courage to face death in the form of germs as in the form of bullets, and to such heroic men do we owe our growing immunity from disease in the modern world.

CHEERFUL NEWS FROM THE DOCTOR

School Health Much Better

The report of the Medical School Officer for London for 1919 is cheering reading, for it reports the lowest death-rate among children ever recorded.

The death-rate from measles was particularly low, and the only disease at all rampant was scarlet fever.

During the year more than 300,000 children were medically inspected, and 169,200 received medical treatment. The general condition of the children, as regards nutrition and cleanliness, was distinctly better than in the year before the war.

It is, of course, of the greatest importance that children should have good teeth, and a tremendous amount of dental work was done, no less than 69,361 teeth being stopped, and more than 300,000 extracted.

In August the King's Canadian Camp School was opened at Bushey, and 303 delicate boys were admitted and stayed for three to six weeks. All the boys improved in health, and most of them gained more than half a stone in weight. There can be no doubt at all that many delicate children would improve in health if they were sent to open-air schools, and the Education Committee of the London County Council has decided to start thirty schools, with accommodation for four thousand children.

ALONE ON A WIDE, WIDE SEA

A London ship on her way to New York has picked up, 800 miles from the American coast, two French fishermen who had been adrift in an open boat for twelve days, and had lived on nothing but seaweed.

FAR TOO MUCH GRUMBLING

The Mad Hatter's Idea

WHY NOT BRING MERRIE ENGLAND BACK AGAIN?

By Our Wonderland Correspondent

"There was a most important piece of news in the papers today," said the Mad Hatter.

"What was that?" I asked.

"It was under Wills," he replied. "A Scotsman left £500 to a lady for not grumbling. That's the stuff to give 'em! If I were rich—and I shall be one day—I'd leave my money in the same way. Nothing to grumblers—not a penny! All my dross should go to bright eyes, brave hearts, and smiling lips."

"Well done, you!"

"To my way of thinking," said the Mad Hatter, "there's nothing more contagious, infectious, destructive, and disgraceful than grumbling. I remember the day when a grumbler in England was looked upon as a monstrosity, like the Fat Woman in a country fair. You had to go and look for him, and when you found him you laughed. But now—"

"Well?"

"They're as common as motor-cars. The rare thing now is a jolly person. I declare it is. Why, look at errand-boys! When I was young an errand-boy made the life of a 'masher' unendurable. He could set a whole street laughing at silly fashions. And so it was with bus conductors. Why, a journey through London in those days was one long ripple of smiles! But now—"

"Well?"

"Take any of the old poets—Chaucer, Spenser, Shakespeare—all cheerful. Take 'em now, from Tennyson downwards—all grumblers. I tell you what it is. The English are ceasing to be English. They've all got the hump. I made a verse on it just now:

The English once could joke and chaff,
They loved a glad, a cheery style;
But now you never hear them laugh,
And very seldom see them smile.

O, England's heart was bright as gold
When England loved and praised
her Maker:

But now I think that she has sold
Her birthright to an undertaker.

"Well, look at the papers! Nothing but gloom and terror. Look at the streets! Nothing but glum faces. English! They're not English; they're a lot of Humpers."

"Oh, come now," I said; "you are exaggerating! And if you aren't careful I shall strike your name out of my will."

"What for?" he demanded.

"For grumbling," I said.

"Grumbling!" he cried. "I'm not grumbling. I'm—"

But he stopped short, white and trembling. After a moment he said: "I'm like Hamlet:

The world is out of coal: O cursed spite
That I was ever born a fire to light!

"Perhaps," he said, nursing his chin and blinking his eyes, "I should be better employed cutting coal to leave in my will to people with bright hearts but fireless hearths than in pointing out that everybody is doing what I'm doing—grumbling, grumbling, grumbling! Sir, you've made my head ache. I thank you."

WHAT THE X-RAYS REVEALED

A famous 16th century painting of the Virgin showed her arms in a curiously cramped position. The picture was X-rayed in Paris, and it was then seen that originally she had been holding an infant Jesus, but the figure had been painted out with dark colour.

THE WEEK IN HISTORY

STORY-TELLER OF THE PRAIRIE

Man Who Taught Us How to Measure Heat Accurately

MERRY BOY AND A BURNT BOOK

Sept. 12. Marshal Blücher died at Krieblowitz 1819
13. Philip II. of Spain died at the Escorial . . . 1598
14. Montcalm, Wolfe's opponent, died at Quebec 1759
15. Fenimore Cooper born, Burlington, U.S.A. 1789
16. Fahrenheit died in the Netherlands . . . 1736
17. Tobias Smollett died at Leghorn . . . 1771
18. Matthew Prior died at Wimpole . . . 1721

Fenimore Cooper

JAMES FENIMORE COOPER, the writer of stories about life in the United States when white men were gradually spreading over the continent where previously only Red Indians had lived, was an officer in the American Navy who resigned and wrote books for a quarter of a century.

His first success was *The Spy*, an exciting tale of the revolutionary war with the English; but Cooper's five books that will always keep him famous are a series that picture the spreading of white men over the country, from the forest belt to the open prairie.

They are the *Pioneers*, *Pathfinder*, *Deerslayer*, *Last of the Mohicans*, and *Prairie*; and the homely hero who stalks through them all is a hunter named Leather Stocking.

Cooper wrote about the sea, also, and some history and biography; but his inland stories are his best. They are the history of a nation's growing life, without being called history.

Gabriel Fahrenheit

TAKING our temperature, or the heat of our body, is now quite easy. We put in our mouth a glass bulb containing mercury and marked with a scale of degrees, and if the mercury expands to 98 degrees we say our temperature is normal, or at the average. If it rises above 100 we think of going to the doctor. If it reaches 104 we are ill with fever.

This method of measuring heat by the expansion of mercury is only 206 years old, and the man who thought of it was Gabriel Daniel Fahrenheit, who had been born at Dantzic in 1686. Later, in England and Holland, he made heat-measuring instruments.

Before his time alcohol had been used to record heat, and it was very unsatisfactory. Fahrenheit introduced mercury. Three stages in heat are forced on our attention, namely, freezing point, body heat, and boiling point. Different scales of measurement are in use, but the British and the Americans use Fahrenheit's scale.

Matthew Prior

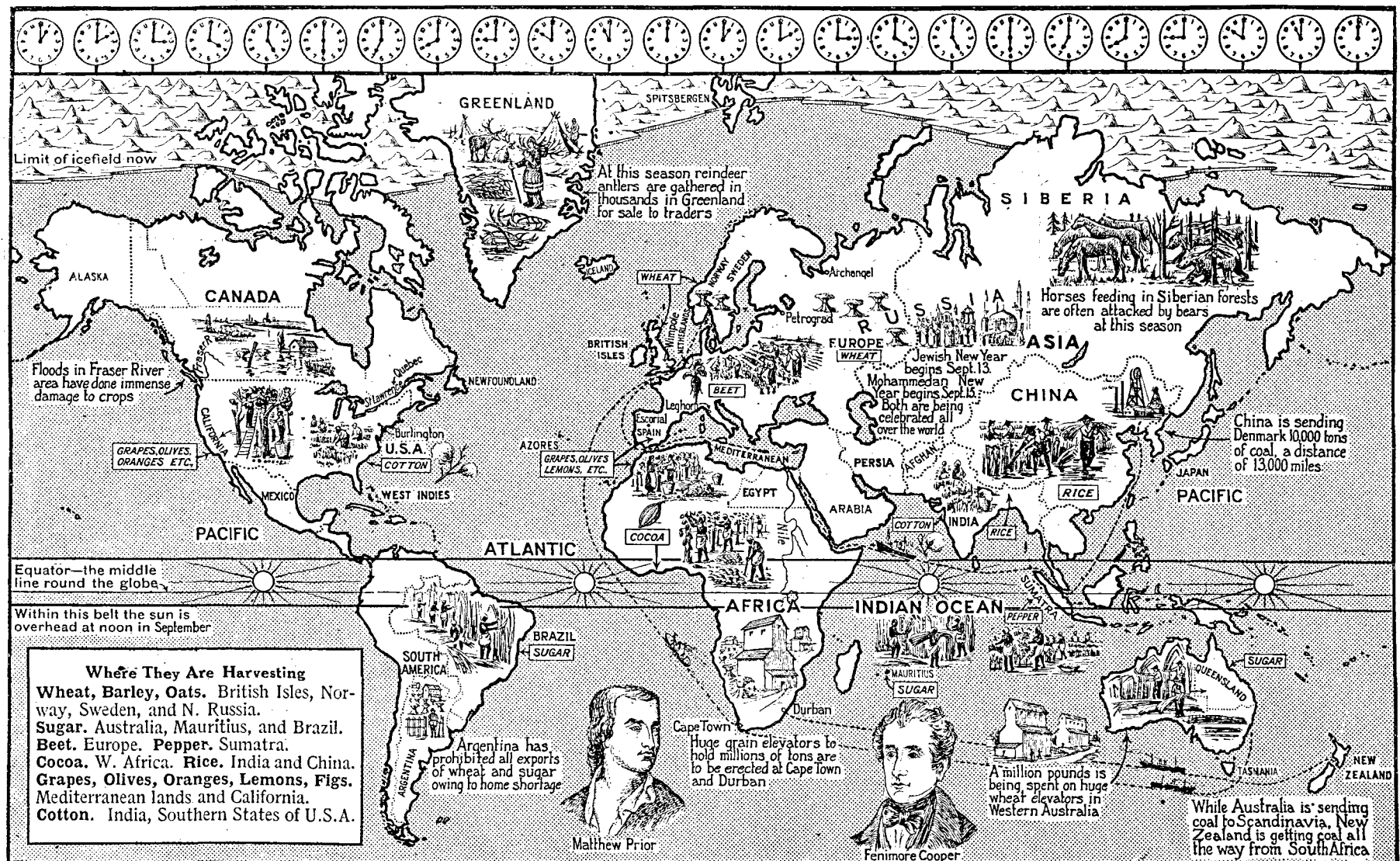
IF you visit Dorset and see, as you should, the interesting old Minster at Wimborne, you will never forget the name of Matthew Prior.

In the Minster is a chained library. If anyone wished to read the books they had to read them there. One of the books is Raleigh's *History of the World*, and in it a hole has been burned and then most carefully repaired, so that the reading is still plain. The local story is that it was young Matthew Prior who fell asleep over the book and let his candle burn down into the page.

Matthew Prior was a clever, merry lad, born most likely at Wimborne, though his name is not in the register of the church. His cleverness won him help from high-born patrons, although he was but a joiner's son, and he was sent to Westminster School and Cambridge University, and became secretary to embassies abroad, and later a member of Parliament.

He wrote gay and bright verses that were much admired 200 years ago, and that sold so well that he made £4000 by one edition. He laughs at us from the past, a clever, careless dog.

PICTURE-NEWS AND TIME MAP SHOWING HARVESTS ALL OVER THE WORLD



A GOOD LOSER

And His Advice to Losers

Sir Thomas Lipton is a man of the world in the widest sense, and not easily surprised or upset; but he was caught off his guard and was deeply affected when, on visiting the great Sing Sing prison, about 30 miles from New York, after he had failed again in his Shamrock yacht race, the prisoners presented him with a testimonial inscribed "To a good loser."

He felt that the men who made him that present knew, indeed, what it was to lose, and he made this happy little speech to them:

"I am very grateful to you, boys. There never was a man born who did not make a mistake. I've made many, goodness knows. But the thing is when we grow older not to repeat the same mistake—isn't it?"

RAT AND THE FOOD BOX
Clever Indian Animal

A correspondent in France, who has lived in India, tells of the cleverness of Indian rats.

When catering for myself I had the greatest trouble to keep rats from raiding my supplies of food. First I kept them in a box on a bracket shelf on the wall. But the rats walked down the wall into the box.

Then I suspended the box from a rafter by a thin sash-cord in the middle of the room four feet from the ground, and weighed down the lid with stones; but the rat would not be denied. He walked down the rope, and awoke me in the night trying to dislodge the lid.

Pronunciations in this Paper

Antirrhinum	An-ter-ri-num
Cepheid	Sef-ee-id
Chipewyan	Chip-ee-way-an
Epizootic	Epi-zo-ot-ik
Escorial	Es-ko-ri-al
Millet	Mill-ay
Pueblo	Pweb-lo
Van Eyck	Van Ike

BABIES IN MOTOR-CARS

A Jury's Queer Verdict

By the Children's Doctor

Not long ago a baby three months old died suddenly in a motor-car, and the jury found that it was suffocated through being driven in a car, "the air pressure caused by the speed producing dislocation of the infant's respiratory organs."

The jury's verdict attracted a good deal of attention, and a medical man has tried to explain the occurrence by stating that the tremendous pressure of air swelled the lungs and would not allow them to relax.

But it is quite certain that the verdict was erroneous, for there is no such thing as dislocation of respiratory organs by air pressure; and it is also extremely unlikely that inflation of the lungs was the cause of death.

We do not need to take an infant in a motor-car to expose it to great air pressure; both infants and adults are frequently exposed to the air pressure of strong wind, yet they do not die, and there seems no reason why air pressure should cause death, even though it may cause difficulty of breathing, and even though, from excessive oxidation, it may cause a temporary pause in breathing.

EPIZOOTIC AMONG CATS

Mixing Up the Words

The grown-up papers have been stating that there is an epidemic among the cats of London, by which they mean a disease that is killing off many of them. The cats are suddenly taken ill and die within twelve hours.

But why do the papers describe this disease as an epidemic? That is quite a wrong word. An epidemic is a disease among human beings. It is made up of two Greek words—epi, meaning upon; and demos, meaning the people; and it cannot be used to describe a plague among animals.

The proper word for that is epizootic, which is made up of the Greek words epi, upon; and zoon, an animal.

KEEPING UP THE CRYSTAL PALACE

Eighty Tons of Steel

Sir Joseph Paxton would have grieved to learn of the deliberate destruction of his famous glasshouse at Chatsworth, described in these columns a short time ago; but he would be consoled to some extent to see the efforts made to preserve another great work of his.

The lofty transept of the Crystal Palace, built of iron and glass, and rising to a height of 175 feet, has now stood for 66 years, and is showing signs of insecurity, so that a huge steel support has been erected. It consists of a series of stanchions 120 feet high, on the top of which a steel girder, 90 feet wide, has been fixed with other supports.

Over 80 tons of steel have been used to make secure this famous landmark.

THE BIRD WITH THE BELL
Sad End of a Long Life

A bird that has been known in West Virginia for at least 108 years is now believed to have come to a pitiful end.

It is a buzzard. In 1812 it was caught, and a small sleigh-bell was tied round its neck. Since then the bird has been repeatedly seen, sometimes as far south as Peru; but summer always brought it back to Virginia.

Recently the aged bird was identified in a very wretched condition, evidently starving, with its beak caught in the hoop by which the bell was attached.

It flew away with a flock of buzzards, but evidently its days were numbered if it could not free its beak. The observers feel sure it must already have closed a career that has interested three or four generations of students of birds.

FEWER BIBLES FOR PEACE TIME

The Bible Society produced only 700,223 New Testaments in 1919, as against 1,311,163 in the previous year. The falling off was due to the coming of peace, as many copies were required for army use at the front.

A JOLLY DAY AT SUVA
The Prince Calls on the Fiji Folk
FUZZY-HAIRED BRASS BAND

A rare school lesson the children of Suva have had. Suva is the capital town of the Fiji Islands, where the Prince of Wales's ship called to take in oil fuel, staying a whole day.

A reception by Europeans, Indians, and Fijians was arranged, with triumphal arches, and the islanders had the time of their lives.

While the Prince went ashore to hear fuzzy-haired natives, clad in loin-cloths and jackets, play hymn tunes of welcome on brass instruments, the children were invited to go aboard the Prince's travelling home, and there they clambered over all the guns, and screamed with delight at the pet opossum and wallaby, the baby emus and the parrots, which shows how very much like the children of the rest of the world are these brown little islanders of the great Pacific.

There are 80 inhabited Fiji Islands, and the population is about 165,000, of whom about 88,000 are Fijians, 62,000 Indians, and nearly 4000 Europeans.

It might well have been expected that, having come safely through the crushes of Australian crowds, the Prince would be clear of peril in mild Fiji, but that was not his fate, for, while riding along a narrow hillside track in the mountainous island of Viti Levu, with the hill above and a deep drop below, he found the path blocked by a fallen tree.

The Prince dismounted, and tried in vain to remove the tree, whereupon one of his attendant officers galloped his horse along the track to jump the tree, and succeeded; but the impetus carried the horse off the narrow track, and it rolled down the hill. Happily, the horse was recovered little the worse for its fall, and carried its master to the coast.

CHILDREN'S NEWSPAPER

SEPTEMBER 11 1920

Happiness Keeps No Birthdays

"AT twenty my life was a feverish adventure, at thirty it was a problem, at forty it was a labour, at fifty it is a joyful journey well begun."

So writes a grown-up American, Mr. Ellis Parker Butler, who tells us that it feels very jolly to be fifty; in fact, that he has only now begun to realise what a jolly thing life is.

Well, we are very glad to hear it, and we congratulate Mr. Butler on his discovery; but we shall refuse to believe that fifty is the age of happiness.

Age has nothing to do with happiness. Many children are unhappy, many old people are unhappy, and many people in between childhood and old age are unhappy. Happiness keeps no birthdays. It has nothing to do with the flight of time or even the circumstances of life. It is a condition of the mind.

With every wish to think well of our grown-up friend, we are obliged to say this—he must have lived most of his life with his eyes shut. What were those eyes doing at school? Were there really no boys at that school as happy at twelve as he is now at fifty?

To love life is always to be happy. We can love life as children and we can love it when we are old; but it will be difficult to love life at fifty if we have not begun to love it in childhood.

What is what we call "the brightest side" of life? It is the side which is most lastingly of interest to the attentive mind. Happiness is not noise, excitement, show, or feverish haste—it is observation, study, reflection, and increasing wonder.

The boy who makes most noise at his games is not the happiest boy in the playground. Look at that lad under a tree with a book. Do you not think the enjoyment he is feeling, as his mind roams far away into scenes more fascinating than those of the merry playground, is just as real as that of the boy who capers highest and shouts the shrillest?

The deeper reality of his enjoyment is seen in the fact that it will last the longest. Quite possibly he will remember, with a thrill of pleasure, the scene he has just read about, and pictured before his mind's eye, after he is fifty, and when boys of his own are shouting or reading in the same playing field.

The happiness that lasts is "the good part"; though the smaller happiness of passing merriment is by no means to be despised, for it, too, is an outflowing of that love of life which may keep us young in spite of lengthening years.



THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London

above the hidden waters of the ancient River Fleet, the cradle of the Journalism of the world



Something Not Gone Up

THERE is more than humour in this rhyme from a local church magazine that comes into our hands:

He dropped a penny in the plate
And meekly raised his eyes,
Glad the week's rent was duly paid
For mansions in the skies.

Are we not all inclined to pay too little in this world for that great hope that beats in all our hearts of the glory of the world to come?

Like a Shakespeare Picture

THAT was a pathetic picture given in a few words in the Times story of the Tsar's family. Yurofsky, the watch-maker of Tomsk who could hardly make ends meet, was put in charge of the prison house, and chatted pleasantly with the sick boy Alexis, the Tsar's only son, whom, a few days later, he was to shoot with his own hand.

Is there not something in the picture that brings to mind that most pathetic scene in Shakespeare, Prince Arthur's appeal to Hubert? Do you remember Hubert waiting for the courage to put out Arthur's eyes with the hot irons on the other side of the door, while Arthur prattled to him?

So I were out of prison and kept sheep,
I should be as merry as the day is long;
And so I would be here, but that I doubt
My uncle practises more harm to me.

And then the little prince went on:

I would to heaven
I were your son, so you would love me,
Hubert.

Are you sick, Hubert? You look pale today.
In sooth I would you were a little sick,
That I might sit all night and watch with you.

And then at last the terrible truth comes out. Hubert has sworn that with hot irons he will burn out Arthur's eyes. And Arthur cried,

Will you put out mine eyes,
These eyes that never did nor never shall
So much as frown on you?

And Hubert will not do it:

I'll fill these dogged spies with false reports;
And, pretty child, sleep doubtless and secure
That Hubert for the wealth of all the world
Will not offend thee.

Yurofsky was not so kind as Hubert, but that picture will surely live in history of this fearful gaoler attending prayers and chatting pleasantly with the poor sick lad he was so soon to kill.

Enough

ROUND and round Time turns the wheel.

Two years ago we were capturing German guns; a year ago we were setting them up in our streets and Crystal Palaces; now we are hiding them.

Matlock District Council has decided to hide all its German gun trophies from sight for five years. Its soldiers do not like them; they have had enough of guns and monuments of war.

Will all who are trying to keep the War alive please note?

Laughter

THE Arabs have a saying that laughter is for white men and monkeys, but they make the mistake of not distinguishing between worthy and unworthy laughter. One of the best things in the world is healthy or beautiful laughter.

It has been well said that a man shows his character in nothing more clearly than in what he considers laughable. A man who will laugh at what is base will do base things; a man who laughs at pure fun is gracious and pure himself.

The laughter condemned by the Arabs is of another kind. It is the laughter of a frivolous spirit. It is the grin articulate. A person who is always laughing, and laughing at nothing, is truly fit for the companionship of monkeys, for is there any greater irreverence than always to be laughing in the midst of this glorious and marvellous creation? True laughter is the recreation of a noble mind; it is the relief from the stress of a solemn attention to the universe.

Tip-Cat

IN spite of the awful example of the rest of the world, North and South China have decided to sign a Peace Treaty.

WHAT is this Wrangel wrangle among the Allies?

MR. BEN TURNER says miners do not go into the pit to play marbles. We live and learn.

THE people of Maine have just enjoyed their centenary so much that they are talking of having one every little while.



PETER PUCK
WANTS
TO KNOW
If railway travellers are enjoying all the fun of the fare

THE modern son of toil seems to have little respect for his parent.

THE American Prohibitionists think they could sweep the country. Dry cleaning, no doubt.

THE toboggan made some time ago for the descent of prices is still waiting.

MR. GEORGE LANSBURY urges the workers to remain solid. He does not want the Government to see through them.

THE chief trouble with Labour seems to be the work connected with it.

No doubt we shall have Peace before they try the Kaiser.

WHY did Mr. Jones travel first with a third-class ticket, papa?
"Just his ignorance, sonny. He isn't a classical scholar."

MODEST PETER PUCK

O I WOULD live in a modest way,
Quite hid from the public eye,
Like the sun on an English summer day
Or the clove in an apple pie.

The Cripple by the Way

By Harold Begbie

A military band marching through a peaceful village passed a cripple by the way-side, who thus addressed the music-makers:

NOT so much noise with your
Drum, fife, and brazen-throat,
Drowning the trills of the
Skylark's delicious note:
March through the cities and
Towns full of sin and pride,
Leave to the song of birds
This our old countryside.

HATEFUL to me is the
Music of sword and gun;
Strutting drum-majors are
Figures all made for fun;
Khaki's a colour for
Murder and things obscene.
Go, get you gone from the
Fields that God painted green.

HAVE you forgot, Cripple,
Those who this colour bore
When your green England like
Thunder marched out to war?
Hateful, say you, is the
Trumpet's fierce, ringing breath
Ah, but it saved you and
England from worse than death!

MAN, I was younger those
Years, and thought War a
game.

Not till they finished I
Limped with the halt and lame:
That's why I turn away
Now from your trumpet's gush,
Healing my wound with sweet
Sounds of the singing thrush.

BUT not alone for my
Wound do I hate you so!
Why would I strike you down?
Listen, and you shall know:
Leaving the Birds and the
Flowers in the Fields of Life,
Look how the children run
After your drum and fife.

A Free Country

By Our Country Girl in Town

PARKS are the most democratic places in London. Children of all classes play there, and no one cares a fig about clothes: the boy who can throw straightest and run fastest is the boy who is envied.

Nevertheless, some are luckier than others, and are pitiful for the unfortunate. Witness this incident.

A particularly ragged, sharp-looking, dirty boy came to rest on a bench near me the other day, his soap-box car in tow.

Presently a neatly-tailored little fellow approached with his nurse. He had begun to snort like a horse, and started to trot when her hand closed upon his shoulder, and she said:

"Don't romp, Master Jock."
The ragamuffin's face blazed with indignation, which turned to contempt as the little boy obeyed. Then he said, sorrowfully, like a Hyde Park orator, but with a little twinkle for me:

"An' they call this a free country!"

Life's Dusty Way

We march as weary soldiers all
Along life's dusty way;
If any man can play the pipes,
For God's sake let him play!

FAMOUS PICTURE FADING

WILL THE ANGELUS BE LOST TO THE FUTURE?

Masterpieces Painted in
Colours that Perish

OLD MASTERS AND THEIR SECRET

Possibly no other modern picture has made such a world-wide appeal to the sympathy of thoughtful people as the Angelus, painted by a French peasant turned artist, Jean François Millet. It is a lovely poem in colour of the humble rural life Millet knew so well, the representation of a French labourer and his wife in the fields, pausing at their toil with bowed heads as they listen to the bell from the distant spire calling to evening worship. It shows us the beauty, pathos, and piety of the peasant as opposed to the squalid and savage qualities which many novelists delight to depict in their writings.

Engravings and various other forms of reproduction have carried the Angelus all over the civilised world, but the great original itself is perishing. The colours are changing, the paint is cracking; all the Millet pictures which are on exhibition are fading.

Poor Artist's Valuable Picture

This is very distressing, for the Angelus is only just over 60 years old. As its condition is worse than that of some of his other works, the presumption is that Millet's tendency to use bad, unenduring pigments increased towards the close of his career. Was poverty responsible for his choice of media? The Angelus was sold for over £23,000 after he had been 14 years in his grave, but all his life the artist was poor.

The deterioration of Millet's pictures is not an isolated cause for regret; the works of Theodore Rousseau, the French landscape painter who was at work at the same time as Millet, are turning black, and many other fine examples of modern painting in the Louvre are fast losing their glories. Yet we have works by Van Eyck, with whom oil painting began, fresh and wonderful after five centuries.

Man Who Coveted Fame

The decline in the mastery of materials did not begin with Millet or Rousseau. One of the great tragedies of British art is that the works of Sir Joshua Reynolds are cracked and discoloured beyond redemption. Nobody better understood the technique of his calling than Reynolds, and the presumption is that he used colours chosen for the brilliancy of their immediate effects, regardless of their lasting value.

And yet he coveted fame; he longed for the admiration of the generations to come. "I will go down to posterity on the hem of your garment," he said as he painted his name on the flounce of Mrs. Siddons's skirt. But the portrait is now among the most disastrous examples of destructive colourings. It is cracking in all directions, and darkening as if night were descending on it.

Chemistry of Colours

In the old days a Dutch artist would spend six weeks of laborious toil over the painting of a twopenny besom; Michael Angelo would create one of his colossal prophets for the Vatican in half a day. The work of both men is equally lasting, good today after centuries of exposure. They mixed their colours with brains, as Opie said of his own.

Today artists should know more of the chemistry of colours than has ever been known before. Yet it is a fact that the Old Masters knew more about the safe combination of colours than their successors. We still have no colourist to match the harmonious splendours of Titian and the other great Venetians, and their pictures gleam with brilliance century after century, while ours wither and fade.

THE WAYS OF AN ANT IN THE ARGENTINE

One of the ways in which the balance of nature is disturbed is by introducing an animal into a new country where there are no natural checks to its increase.

Everyone knows how the rabbits imported into Australia and the sparrows imported into the United States have made huge and costly rents in the web of life. But man is slow to learn, and another lesson has now come for his instruction—the story of the Argentine ant, which has established itself in Madeira.

The results have been disastrous. Coffee cultivation has been ruined; sugar canes and bananas have suffered badly; lemon trees and other fruit trees that support scale-insects and greenfly have been destroyed in large numbers; sweet potatoes, which form an important

part of the food supply, have disappeared in many districts.

Dr. M. C. Grabham tells us that every house is invaded, that every kind of food is attacked, that poultry and bees are powerless to resist the persistent pests. By making a fatal circle of poison round one lemon tree he found, that 40,000 ants were visiting it at one time; and they are so ingenious that they build bridges to reach flies caught on sticky fly papers. There is no winter weather to check the invaders; they have almost no enemies except spiders; they have suppressed the native ants that interfered with them; and they do not quarrel among themselves.

How the rent in the web is to be mended no one can tell.

THE GREAT PICTURE THAT IS FADING AWAY



The famous picture of the Angelus, by the French artist Jean François Millet, is fading away, like the works of Sir Joshua Reynolds, and may be lost to future generations

NEWS FROM EVERYWHERE

There are now 30,785 blind persons in the United Kingdom.

The Australian Commonwealth's fleet of fifteen steamers has paid for itself in two years.

Papers Still Going Up

The number of newspapers that have been compelled to increase their price owing to the continually growing cost of paper is now 560.

Millions of Workers

At the Trades Union Congress at Portsmouth nearly a thousand delegates represented between six and seven million workpeople.

How to Succeed

The Old Comrades' Association of the 19th Battalion London Regiment has adopted as its motto the words: To be sure of a job fill it so tightly that you can't fall out.

Why Taxes are Heavy

The Foreign Office recently approved without a question a refund to the Egyptian Government of £60,000. Later it was found that there had been a clerical error and the sum should be £6000.

The total number of Germans killed in the war was 1,718,608.

Two nests of wild rabbits have just been found on top of a haystack at Maldon, Essex.

The Rats of Paris

Paris has eight million rats, which have become such a menace to the city that a great war of extermination is to be waged against them.

The Bible and Babel

The Bible, in whole or in part, is now translated into 528 languages. Ten fresh translations are now being made.

Saved After Many Days

A fast turbine British steamer, the Ben-My-Chree, has just been floated in the Mediterranean after lying a wreck for two and a half years. She was a vessel of 2650 tons.

Monkey-like Men

An American missionary, just returned from the Congo, says he discovered a new race of pigmies, remarkably monkey-like in their appearance and habits. They travel through the tree branches with amazing agility.

THE TROUBLES OF OLD KING COAL

WHAT THEY ARE ABOUT

Our Hardest Working Man is
Worthy of His Hire

THE MINER'S EASY WAY TO PROSPERITY

The miners have voted in favour of a strike as we write, but it is believed that the nation will be saved from the great disaster which must follow the stoppage of the coal supply. All good people hope that the difference between the miners and the Government will be settled in a spirit of peace, and not by war.

The miners of this country are absolutely essential to its prosperity, and the nation has for many years been proud of them. It has gladly raised their wages, so that at present the rise has been more than equal to the rise in the cost of living. The result has been, of course, that coal has gone up in price, but the public has been willing to pay for the better treatment of the men who do the hardest work that is done every day in these islands. Our hardest working men are worthy of their hire.

How Coal Helps the Country

Now the miners have asked for another rise in wages, and they have suggested to the public that it should come out of the profits of the coal we sell to foreign countries. This is a very important question. Let us look at it briefly.

At present the mines are nationalised temporarily—that is to say, they are still controlled by the Government as in war time, and the Government fixes the price of coal. There is a very great demand for British coal all over the world, and enormous prices are paid for it; and what the Government has done is to fix as low a price as possible for our home public, and to sell all the coal we can spare abroad at the highest price we can get. This foreign sale of coal keeps down the cost at home, and all the profit from it goes to keep down our taxes; so that we profit from it in a double way.

It must be remembered, however, that this high price abroad may not last, and we cannot reckon on it very long. It is not a permanent income on which the mining industry can count.

A Friendly Word to the Miners

But what the miners say is that our foreign profits should be divided in two ways, part going to the miners as extra wages, and part going to reduce the cost of coal at home. What the Government says in reply is that the whole of this money, which is merely a bit of war profit, ought to benefit the whole nation, as it does now, whereas if the miners took part of it they would be taking it from the tax-payers, who would then have to find the difference in taxes.

A much wiser suggestion is that the miners should increase their own wages by increasing the profits of the mines, as they can easily do. There are a hundred thousand more miners at work now than before the war, and they are producing 50 million tons of coal less every year.

If every miner will work a little harder, as hard as he did before the war, we shall have more coal, the price will go down, and the miner can have his extra wages out of the extra profit that is made. Everybody will be glad that he should have it, and it will please him much more, we may be sure, to earn his increase in that way than to have it given him out of this special fund which is now helping to pay the nation's heavy bills.

AUSTRALIA'S NATURAL ENEMIES

In Australia cattle tick has caused the death of millions of cattle; and the prickly pear now infests 22 million acres, spreading over a million acres a year.

SEALED-UP ROOM Opened After Many Centuries REVEALING THE MYSTERIES OF CENTRAL AMERICA

There is a haze of mystery obstructing our view of the native races of Central America and the adjoining parts of both American continents before the arrival of the Spaniards.

We know a good deal about the people who were there when the Spaniards seized the country, but how they came to be what they were has to be partly inferred from discoveries that are even now going on, and will go on for centuries.

The American Museum of Natural History of New York City is doing excellent work by excavating ruins, and noting carefully all that is found. At the Pueblo ruin in the Aztec country of New Mexico, for instance, the excavators have just opened out a new room that seems to have been a shrine of the Aztec race before there were any historical records.

Serpent on the Ceiling

The room has been sealed up for no one can tell how many centuries. Very little was found in it, unlike some of the houses, where all the domestic objects seem to be left in some rooms. Evidently, when some calamity caused the secret room to be abandoned, the contents were carried away, as being too valuable or sacred to be risked.

But the room itself is of great interest, for it is skilfully decorated. The interior is painted a brilliant white on a plastered surface, with dull red side borders, and a series of designs. On the ceiling are carvings of a sacred serpent, and from it strands of rope are suspended.

It is clear that the city containing the sealed room which has just reappeared was destroyed by fire, and the excavators have calculated the amount of timber used—pine, cedar, and cotton wood, with split pine for the ceilings.

Evidently we are coming near to much more knowledge of the Aztecs and the life they had made for themselves before they were disturbed by invaders or by European voyagers.

A BOY'S DINNER HOUR And What He Learned in It

One of the latest arrivals on our staff of office boys, out of the elementary schools, hands in this note of a visit to St. Paul's.

We were spending part of our dinner-hour looking round St. Paul's, where a gentleman was talking to two others. Seeing us, he said, "I am telling these two gentlemen about St. Paul's; would you like to listen?"

He told us to look specially at the great candlesticks in front of the altar, which he said were copies of those made for the corners of Wolsey's tomb. But, as Wolsey fell out of favour, Henry said he would not have them on his tomb, but would take them and put them in St. Paul's. Then, after Henry died, Cromwell sold them to the Belgians, who, when the Germans overran their country, melted them down for munitions.

He also told us that all the pictures over the altar are not painted, but are made of tiny pieces of coloured marble.

If you go behind the altar you will see some very ugly black marble. This is the most expensive marble you can buy. A man went out to South Africa and found a quarry of this, but after he died the quarry was lost. Some time after the English sent another man out there, and he re-found it; and that is the marble you can see in St. Paul's now.

If you buy a guide-book you will read that the two big gates on each side of the altar are of brass, but that is wrong. They are really gold-plated bronze.

The gentleman had not time to tell us all the wonderful stories of St. Paul's, but we are going again, and shall look out for him, for he was "a good sort."

The Red Man in His Native Haunts INDIAN TRAPPERS AND THEIR WAYS Life in the Hunting Grounds of Arctic Canada Among Thirty Million Caribou THE GOOD & BAD QUALITIES OF A DYING RACE

A Book Being Read Now

The Arctic Prairies. By Ernest Thompson Seton. Constable. 8s. 6d.

Does the boy of today think of the Red Indian as his father thought of him when he was a boy? We wonder.

Of all the adventures that charmed fathers when they were boys, none could equal those possible in the wigwams of the noble Red Men. Where are those Indians now?

Most of them are either obliterated among the millions of the whites of the United States, or are crowded back into the dreary "bad lands," where a life of adventure is not possible. The open hunting grounds are gone.

But in the far north, beyond the prairie corn-lands, there are still forest and prairie regions where Indians and half-breeds make up the bulk of the thin population, and hunting the fur-bearing animals, fishing, and tracking the caribou, the moose, the musk-ox, and even the bison, are the activities that fill the thoughts of the copper-skinned remnant that remains, well cared for by the Canadian Government.

In the Treeless Prairies

Still the Indian finds his work and pleasure in bringing his skins and furs for sale to the scattered stations of the Hudson's Bay Company.

In the years before the war that fine student of animal life, Mr. Thompson Seton, made up his mind to go northward from Manitoba, beyond the corn-lands that are ever creeping farther down the northern valleys.

This book contains the fascinating story of Mr. Seton's adventures. It is crowded with every kind of interest. How the naturalist travelled by the northern waterways; how he studied the modern Red Indian; the animals he found, their habits and numbers; and his surroundings as he left the forest zone for the treeless prairies of the far north, make up a breathless story told in a spirit of simple truth.

At each stage in their journey he and a naturalist companion had Indians or half-breeds as their guides, hunters, and boatmen, and Mr. Seton is extremely fair, though quite candid, in his accounts of the modern Red Man. What, then, is the Indian like?

Happy Hunting Grounds

The answer is that the best men, selected for special service after others had proved untrustworthy failures, were faithful, clever, and enduring, with a knowledge of the wilds they traversed. A caribou hunter took them where the wild reindeer passed them in hundreds. What they saw led them to calculate that there are at least 30,000,000 caribou still making their home in the vast expanse of the North-West Territory. Here, at any rate, the Red Man may still find his "happy hunting ground."

But the average Red Indian, it is clear, is far removed in character from the noble-minded type which the fathers of this generation learned to admire in the stories of the earlier novelists. The most generous and thoughtful treatment failed to make the Indian boatman anything but an ungrateful and indolent slacker, dawdling over his work, continually

grumbling, and hindering instead of helping the expedition on which he was engaged.

The Indian, who at home would be glad of one good meal a day, would eat seven better meals a day while serving the white man, and then would say, "Food no good," and pull the boats to the shore to idle away half a day when all the conditions were favourable for going on. The only method of dealing with this lazy spirit was for the white men and their trusty guide to get into the boat that carried all the provisions and row away. Then, in double-quick time, the slackers would follow.

An example of the Red Man's spirit appeared when the expedition arrived where delicious fish were found in great abundance. Then all desired to stay and fish. Mr. Seton having allowed them time and provided all the means for fishing, a plentiful supply was caught and divided among themselves, but for the white men's share a most exorbitant price was asked, and all grew sulky when the leaders declined to pay it.

Mosquitoes of the Cold North

The worst feature of the red race was its instinctive cruelty and ingratitude, shown most glaringly in its treatment of the faithful dogs that are the mainstay of the tribes throughout the winter months.

Even the picked men, guides and hunters, could never be brought to understand why the travellers wanted to see animals which they did not shoot, and their disgust at photographing wild things amid their natural surroundings, instead of shooting them, was never overcome.

Mr. Seton's plan for testing the number of mosquitoes in one place compared with another was to hold up his bare hand for five seconds, and count how many of the piping pests settled on it and bit him in that brief period. If only five mosquitoes punctured the back of his hand in five seconds, the number was low, but if there were twenty bites in that time, it was high. That is why so few people explore the North West.

One of the most interesting pieces of information in this most interesting book tells how every Indian reads and writes his own language.

Writing by Sound

The tribes among whom Mr. Seton went were chiefly Chipewayans and Crees, and their languages have no alphabet. They are written phonetically, by sound, in syllables. A clever Methodist minister among the Crees invented the writing, which needs only 36 signs, as there are 36 syllabic sounds.

The name of this minister was James Evans. His writing of the language can be learned by an intelligent Cree Indian in one day. The Chipewayan language is rather more difficult, with 73 syllables and sounds.

The Indian of today, as he travels through the forest, has no need to tell those who follow him by mystic signs which way he has gone, or hint to them what he wants them to know. He can write it, and be sure that whoever of his tribe follows will be able to read.

BASS ROCK TRAGEDY C.N. Reader Who Was There WHAT BIRDS KNOW ABOUT A SHIP

A kind-hearted naval petty-officer, who was serving his country in the neighbourhood of the Bass Rock when an oil-tank ship was sunk and covered the surface of the sea with oil, with terrible destruction to the birds that nest on the rock, sends us this note.

We picked up with boats a few of the guillemots, and, taking them aboard, squeezed the thick oil out of their matted feathers; then we washed them in paraffin, and followed this treatment with a hot bath. After that they looked quite respectable again.

When we got to a place where there was no oil, after having them aboard for a few days, we gave them their freedom. But all of them turned again to the ship, and tried to remain with us. Of course we did not want them, so eventually they dived and were again at home in the deep.

Sea birds know at once when a trawler is about to haul in her net. When a streak of steam appears from the exhaust-pipe of the winch, though they are miles away, the gannets and gulls will at once be all about the boat, ready to pick out the young herrings.

A SUBMARINE STUDIO Photographs Under Water

Kinematograph pictures of under the water will shortly be taken from a huge diving bell, in which the operator with his camera can take sharp photographs more than a hundred feet away, and 200 feet from the surface.

A special type of camera has been made for this work, the lens having to be "corrected" for the refraction of the rays in the water.

By means of this submarine studio many wonderful under-water pictures have been obtained, and, although it was built with the main object of recording the under-water movements of a famous woman swimmer, there are possibilities of getting entirely new records of submarine scenery and life which would be of great educational value.

SAFE IN THE STORM Chaffinch in the Hen-Roost

A Scottish reader, living near Falkirk, sends this pleasant little observation.

It may interest readers of the C.N. to hear of a chaffinch which has sheltered under a hen during the wet weather.

For two days it rained continually, and one evening my grandmother observed a chaffinch nestling under the wings of a hen along with the chicks.

In the morning it fed with the chicks, and hopped in and out all day. At night it flew away, but soon returned with its mate, and together they spent the night.

It was a pretty sight to see them hopping on the hen's back, or nestling among her cosy feathers.

WHO IS BABY?

Identification Discs for Children

All kinds of efforts are being made to prevent the loss of children and babies, and to make the identification of lost ones more easy. Finger-prints and foot-prints are already in use in America for even tiny children.

A small aluminium identification disc is now being given to each infant in one of the large American hospitals. The disc is the size of a sixpence, and has a hole in it, through which a tape can be put.

DOG'S IDEAS OF PROPERTY

A Jersey correspondent gives an account of a dog's strong feeling of guardianship over its mistress's property.

A friend who lives close by has a fox-terrier which guards her mistress's things so well that if a visitor sitting at tea takes a piece of bread or butter or cake from a plate which has not been offered by her mistress she will growl. But if her mistress offers the plate to a visitor the dog will not mind at all.

THE WEEK IN NATURE

Beautiful Autumn Tints

FLIES COME INDOORS

By Our Country Correspondent

September 12. Autumn has begun to paint the countryside with its lovely tints, and one of the first of the trees to change colour is the lime, which is now turning yellow. In a week or so the whole hedgerow will be one mass of dainty reds and browns and ochres, and it is difficult then to decide which is the most beautiful, autumn or spring.

September 13. House-flies are now becoming a nuisance indoors, where they are driven by the cooler weather of morning and evening. They are particularly conspicuous on the window-panes, where they love to congregate, walking restlessly about.

September 14. Among the moths that may now be looked for are the Autumnal, the Mallow, the Streak, the Figure of Eight, the various Sallows, and the Vapourer. They are not very conspicuous either in size or colouring, but are interesting when hunted for.

September 15. The house sparrows, which are always with us, and therefore attract little attention, are quite interesting birds, and just now they attract more notice than usual because they are collecting in flocks. In towns they do a good deal of scavenging work, but in the country the farmer does not love them.

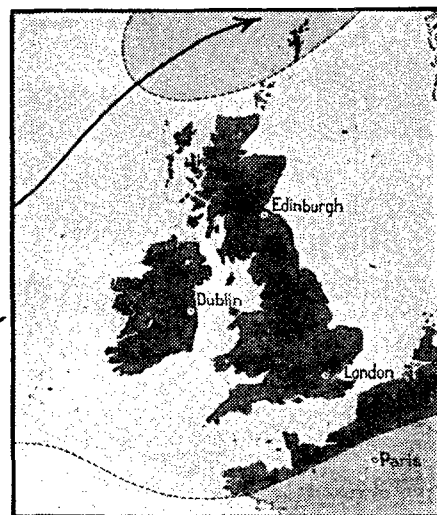
September 16. The common drone-fly, which is now entering our houses, is often mistaken for a bee on account of its resemblance in form, colour, and flight. It also has a habit of moving its abdomen up and down as though about to sting, and this assists the illusion, and often protects the creature.

September 17. The little golden-crested wren, the smallest of all our British birds, has resumed its song, which is a low, weak trill. This bird is pretty generally distributed throughout Great Britain, and is seen flying round coniferous trees in well-wooded districts.

September 18. A very striking fungus just now is the blewits, which has a pale yellow or dingy white cap three or four inches in diameter, incurved, and underneath crowded white gills, the whole on a thick stem of bright lilac.

C.N. WEATHER MAPS OF THE U.K.

The Storms of September



This map shows the storm areas in the United Kingdom for September. The frequency of the storms is indicated by the darkness of the area, and the arrow shows the direction.

NEXT WEEK IN THE GARDEN

Plant out seedling cabbages for the principal autumn sowing two feet apart each way, to remain for hearting. Hoe and thin spinach and turnips. A small sowing of radishes may be made for a late supply.

Where not already done, take cuttings of violas for spring flowering; also pentstemons and antirrhinums, for the sooner these are rooted the better will they withstand the winter.

A NEW FOOD

How the Bulrush Helps.

By the Children's Doctor

The most important of all foodstuffs is starch. We obtain it mainly from potatoes, and from cereals such as wheat and oats. But lately Professor P. W. Claassen, of Cornell University, has suggested that bulrushes may be used as a source of this valuable foodstuff.

This is not quite a new idea, since the Kalmucks and the Don Cossacks have long used the underground stalks, or "rhizomes," of the bulrush, which is sometimes called the Cossack asparagus, as a food; and the natives of Scinde and New Zealand make bread of its pollen. Still, the rhizomes have never been used extensively as a source of flour, and their value should be better understood.

Professor P. W. Claassen made a special investigation, and found that 5500 pounds of flour could be obtained from an acre of bulrushes, and that the flour was very similar to wheat flour, and of equal value. In the United States there are thousands of acres of bulrush marshes, and accordingly there are thousands of tons of food material waiting for anyone to collect.

How many acres there may be in Europe we do not know, but the bulrush grows in great quantities along the shores of the Baltic Sea, and there must be thousands of acres of swamps where it could be easily cultivated. In the marshy lands of great rivers, such as the Nile, it would probably grow luxuriantly.

The starch is contained in the core of the rhizome, and by peeling the rhizome it is readily obtained. Professor Claassen states that in half an hour it is possible to dig and peel enough rhizomes to provide three or four cupfuls of starch. He also states that biscuits made of bulrush flour are not very different from those made of wheat flour, and that bulrush puddings are quite satisfactory.

MONA—MY FAITHFUL DOG

The Friend of Fourteen Years

A reader in the hill country outside Glasgow sends these notes on her collie Mona.

She was one of the wisest dogs I have known. Among our chickens once were two who went lame with rheumatism. They were taken to the heat of the kitchen, where they improved, but still limped.

Mona's bed was in a cosy corner beside the fire, and one morning I found the chickens perched on her back with their cramped feet buried in her soft hair. This became a daily habit, and so kind and unselfish was the old doggie that she would not rise for food lest she should disturb them.

Mona was let out at the back door first thing in the morning. It was also the habit of the hens and chicks to gather round the same door on the outside to await their breakfast. There often they stood close together like a feather quilt, and blocked the exit.

Instead of scattering them by bounding through them, Mona was so gentle and so fearful of hurting them that she would wait until someone made a way for her to pass through them.

She lived with enduring faithfulness until she was nearly 14 years old.

WORK MADE EASY

Machine that Washes Plates and Dishes

"Woman's work is never done," we say, and although this is quite true, it is equally true that with many of the modern devices for use in the home woman's work is being made easier.

The latest example of this is a machine which washes and dries dishes and plates at the rate of 40 a minute. All that has to be done is to turn a handle and put the plates into the machine one at a time.

One set of brushes scrubs the vessels, and they are then passed on, to a tank, in which they are rinsed. Another set of brushes dries them, and they are carried along a moving platform and delivered in stacks ready for use again.

C.N. QUESTION BOX

Little Puzzles in Natural History

All questions must be asked on postcards, and not more than one question on each card

Can an Octopus Swim Backwards?

Yes; taking water into its body it squirts it out of a small tube with such force that its body is driven backwards. The stream of water propels the octopus as a pole propels a punt.

Are Baby Hedgehogs Prickly?

The prickles of a baby hedgehog are at first quite white and soft, like a budding feather. They soon become brown and hard, and as sharp as needles.

What is an Ant's Nest Made of?

Our common ants make their nests simply by tunnelling in the soil miniature underground cities relatively as strong as, and much more wonderful than, the runs and citadel of the mole.

What Does a Deer Eat?

Young heather, grass, acorns, berries, foliage, young shoots of trees, and, if they can break in, anything the farmer grows. It seems an irony that so beautiful a creature as a deer should prefer a strong-smelling onion as its tit-bit.

Do all Animals Sweat?

Animals have not all the same means of regulating bodily temperature. Dogs and cats sweat chiefly from the pad of the feet; pigs mostly on the snout. But some, such as rats and rabbits, do not perspire at all.

How Did Seals Get into the Caspian Sea?

The Caspian, like the Aral Sea, is now an inland sea. Once they were both connected with the Black Sea and the Arctic Ocean. The seals now found have descended from those shut up in the Caspian when land rose and isolated this sea from the greater ocean.

What Creatures Sleep on Their Backs?

Some ill-advised human beings do, and it causes them to snore. Water boatmen, active beetles that live in ponds, sleep in this position. Probably globe-fishes may do the same thing as, inflated and upside down, they drift with the current.

What are the "Corns" on Horses' Legs?

Relics of bygone horse-life. They are useless now, but it is supposed that long ago they were glands, from which a scented fluid issued. This, brushed by herbage as the animal walked, would leave a trail for the noses of other horses to detect and follow.

Can a Frog Stop Long Under Water?

In summer a frog goes into deep water only to hide by day, and he must frequently pop up to breathe. As winter approaches he sinks to the bottom of a pond, buries himself in the mud, and sleeps for several months without breathing.

What is the Difference Between a Pansy and a Viola?

The pansy is a triumph of the botanist, developed from the wild pansy violet, or heart's ease, and the viola has been evolved from mingled strains of pansy and other varieties. Both belong to the violet group. The pansy bloom is always velvety to the touch, while the viola is not.

Do Flies Sleep at Night?

Yes, unless there is a light to disturb them. But not all stationary flies seen in autumn are sleeping. They are attacked by a fungus which disables and then kills them.

Does the Puss-Moth Caterpillar Eject a Poisonous Fluid?

In the segment next to the head is an opening from which this caterpillar can squirt fluid with much force. The fluid is formic acid, and if it strikes the face skins it, and causes intense pain should it reach the eyes. The effects may last for days, but blindness does not result. A doctor should be consulted in the case of such injury.

THE EQUATORIAL TRAIN PUZZLE

Why It Weighs Less Going East Than West

By an Astronomical Correspondent

Did you know that a train moving round the Equator weighs less when running eastwards than when it is standing still? The fact has been sometimes questioned, but a simple mathematical proof has lately been furnished by Professor E. V. Huntington. It is shown somewhat as follows.

Suppose, first, the train is at rest. Now, though it appears at rest, the train, like everything else on the Equator, is really moving west to east, as the earth turns round at a speed of 1038 miles an hour. We say, therefore, that it is moving in a circular path, the circle being 7926 miles across, which is the diameter of the earth; and that its absolute speed in a west to east direction is 1038 miles an hour.

Now, it is easy to see that if there were nothing to keep the train in touch with the earth, whirling round at this tremendous pace, the train would try to fly off, as a stone does when it is whirled round at the end of a string. But it is kept down by what we call its weight, which, in other words, is the force of gravity attracting it towards the centre of the earth. There are, consequently, always two forces pulling in opposition—one which tries to fling the train off the earth, and one which holds it down. It is only the second of these which is quite obvious, but the other force is always present, though imperceptible.

Pull of the Earth

We must skip some of Professor Huntington's mathematics, and take for granted the fact that the strength with which the earth pulls the train down to its own centre, and resists the train's tendency to fly off, varies according to the speed at which the train is moving along its great circular path. It varies with what is called the train's *absolute velocity*. What do we mean by that? Well, if the train is moving west to east at a rate of 60 miles an hour, while the earth is also turning west to east at the rate of 1038 miles an hour, then the actual movement of the train west to east is 1038 plus 60 miles an hour, or 1098 miles an hour; whereas if the train is steaming 60 miles an hour east to west its actual speed in its great circle is 1038—60, or only 978 miles an hour.

A Train Weighs Nothing

In these circumstances the weight of the train is different, or, let us say, the pull of the earth on the train is different. It does not change very much for these small speeds, or even for considerably greater ones; but, mathematically stated, if the train originally weighed 1,000,000 pounds, its weight at a speed of 60 miles an hour in a westward direction would rise to 1,000,387 pounds. If one could get the speed up to 1038 miles an hour the weight would increase to 1,003,450 pounds. It can never weigh more than that.

If it is running eastwards, then its weight up to similar speeds would diminish; and there are two special cases which may be mentioned. If the train could be got up to a speed of 18,700 miles an hour in a westerly direction, or 16,700 miles on an easterly route, then the weight of the train would sink to nothing at all!

1000 MILLION LILIES

Why They Must be Repacked

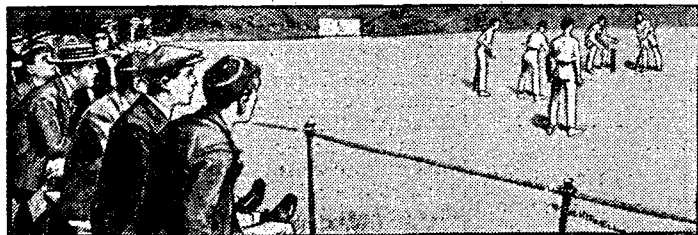
The island of Formosa has sent £5,000,000 worth of lily bulbs each year to the United States, and as the bulbs are packed in Japanese soil the U.S. Government has, by a recent order, forbidden their importation.

In order to overcome this embargo the lilies are to be landed in Vancouver, and then re-packed in Canadian soil, and sent on to the United States free from the Japanese soil which now prohibits their entry! One year's supply numbers a thousand million lilies!

THE MYSTERY MAN

A Thrilling Tale of Play and Adventure at Claycroft School

Told by
T. C. Bridges



CHAPTER 31 In the Tunnel

TOM was the sort of boy who doesn't waste time making up his mind when in a tight place. He had proved that already, on the day when he had saved the lives of Mrs. Colston and her daughter.

He was through the fence as quickly, but not as clumsily, as Harney, and, finding the side of the cutting too steep to run down, simply let himself slide feet foremost.

He had fully expected to see Harney knocked out by his fall. But by some lucky chance Harney had fallen soft, and was not hurt. Before Tom was half way down the bank, Harney was on his feet again, and running full pelt down the line. Either he had not heard the train whistle at all or he was in such utter panic that he was more afraid of Tom than of the train.

Fifty yards ahead the line plunged into a tunnel, and it was for the mouth of this that Harney made at full speed.

"Stop, you idiot!" roared Tom. "There's a train coming."

He might as well have shouted to a rabbit. Harney was clean crazed with terror, and the one idea in his head was to get away from Tom, though what good he could do by that was a mystery to anyone but himself. Next instant he had vanished under the smoke-blackened arch of the tunnel.

Tom glanced back. The train was already in sight, coming round the curve only a couple of hundred yards away. He groaned in horror. "He'll be killed," he gasped. Then he was off at top speed in pursuit.

It was a brave thing to do. Tom knew well enough that, even though the tunnel was of no great length, it was humanly impossible for either him or Harney to reach the far end before they were overtaken. For the train was the midday express, and would not stop at the station. It was coming at a good fifty miles an hour.

Yet it was not until he was actually inside the tunnel that he fully realised the danger into which he had run. The line was only a single one, and the rock sides, sweating with water, were so close upon the permanent way that there did not seem room to stand aside. Even if there was, Tom knew what the draught was. In a confined space like this, the rush of air would whip him away from the wall and fling him sideways under the grinding wheels.

The tunnel was dead straight, and the opposite end plainly visible. It showed the Claycroft station bathed in sunlight, but looking small as a doll's house, or as a real place seen through the wrong end of a telescope. He saw Harney, too. Outlined against the light, the boy sped like a puppet figure towards it.

Once more Tom shouted, but even if Harney heard he paid no attention. For the moment the boy was completely off his balance, crazy with fright.

Next moment came the roar of the train in the cutting just outside the tunnel. The sleepers quivered under its ponderous rush. Tom made a frantic spurt and gained fast. Could he reach Harney before the train caught him? That was the question. It was a race for one life, if not two.

The train was in the tunnel. Its thunder was deafening. Clearly the driver had seen nothing, for he had not slackened speed.

The light grew brighter each instant, but still Tom saw, with sinking heart, that neither he nor Harney could possibly reach the entrance before they were caught.

Harney caught his toe on a sleeper. He stumbled, and very nearly went on his head. Somehow he saved himself, but the delay, short as it was, gave Tom his chance. With a last desperate effort he drew up, and just as the train was almost on him reached Harney, flung himself upon him bodily, and threw him flat on his face between the metals.

"Lie still!" he hissed in his ear. "Lie still! It's your only chance."

Harney lay still enough, and Tom had just time to flatten himself on top of him when the great engine came roaring over the pair. Tom felt a blast of air; a whirl of dust and smoke enveloped him. Then a fearful blast of heated air which, for a terrible moment, seemed as if it must draw him up and tear him from his hold. He drove his fingers into the ballast and hung on.

In a flash the engine had passed, then the heavy carriages came roaring overhead. Was there anything hanging—any coupling or air brake that might catch him? Tom did not know, and the next few seconds were so loaded with suspense that they seemed to stretch into an eternity of horror. He could plainly feel the impact of each coach, as it came rushing over. He was suffocated with dust and heat, yet cold chills of horror made his very skin creep.

It was lucky for him that the ordeal did not last long. No human frame could have stood it without going mad. Tom could hardly believe his own senses when he found that the last coach had whirled by and that he and Harney were still unhurt.

Half blind, streaming with perspiration, he scrambled to his feet, and stood swaying, with his head spinning giddily. Then, stooping again, he caught Harney by the shoulder.

"It's all right, Harney," he cried. "It's all right. We're safe."

Harney did not move or speak. He lay flat on his face, still as a log. Tom stared down at him. The boy's eyes were closed, his face was the colour of tallow. There was blood on his face.

Tom's eyes filled with horror. "Did anything hit him?" he said hoarsely.

Summoning all his remaining strength, he lifted Harney, slung him over his shoulder, and went staggering out of the tunnel down towards the station.

CHAPTER 32 Nettles Has Bad News

"Oh, mother, look at those boys. Oh, dear, what is the matter?"

The voice was that of little Grace Colston, and Tom, looking round vaguely, saw her seated in the pony-trap just outside the station.

Next moment Mrs. Colston herself was running up the platform towards him, and with her a porter.

"What is it, Cosby?" she asked breathlessly. "Has there been an accident?"

Tom, almost too spent to speak, staggered to the end of the platform and laid Harney down.

"He—Harney—fell, Mrs. Colston," he said, in a thick whisper. "The—train went over us, but I don't think he's hurt badly." Then black specks began to dance madly before his eyes, and all of a sudden he sat down flop on the ground.

"You poor boy!" Mrs. Colston's softly-spoken words came dimly to his ears. She turned to the porter. "Foster, pick up Mr. Harney and take him to the pony carriage."

Foster, a big, strong man, swung up Harney easily enough. By this time the station-master himself had seen that something was wrong, and came hurrying up. With his help Tom got as far as the station-master's office, where Mrs. Colston left him, with orders to wait until she came back. The station-master, good fellow, dosed him, and pulled him round quickly.

Of course, he wanted to know just what had happened. All Tom told him was that he had seen Harney go into the tunnel by the embankment and had run after him to warn him that the train was coming. Then, as it was right on top of them, he had held him down between the metals till it had passed over.

"The only thing you could have done, my lad," said the station-master, with warm approval. "If you'd have tried to get him off the permanent way you'd both have been killed. But what in the name of sense was this other doing in the tunnel?"

Tom let this question remain unanswered, and presently back came the pony-trap, with Grace driving.

"Mother's with Harney," she told Tom. "She's afraid he has slight concussion. He's quite insensible. Now, tell me all about it."

But this, of course, Tom could not do. He could only say what he had already said to the station-master. Grace, who now had a quiet pony, drove him back to the school, and, though he vowed he was all right, insisted on taking him to the sick-bay. Here he had a bath and a change of clothes, both of which he badly needed, and then the doctor himself came in.

Tom knew this would happen, and dreaded the interview. Just as he had expected, the Doctor demanded the whole story. Tom looked at him.

"Do you mind if I don't tell you, sir?" he said bluntly.

The Doctor stared hard at him. "So there's something behind this—eh, Cosby?"

"A good deal, sir."

The Doctor was silent a moment.

"Cosby," he said, "I know—I know, perhaps, more than you fancy of the persecution which you and Netley and Brough have endured at the hands of Mansford and Harney and one or two others. Is this part of the same business?"

"I suppose it is, sir. But there's something at the back of it all which I haven't got the hang of. And, if you don't mind, I'd much rather not say anything till I know a bit more."

The Doctor looked very grave indeed.

"Cosby," he said, "I know nothing but good of you, and I would trust you as far as I would any boy in the school. But I think you must see for yourself that, in a case like this, I have a right to ask for your full confidence."

Tom felt almost desperate. If he told all he knew there was no hope for Harney and Mansford. They must be found guilty of something little short of burglary, and would not only be expelled, but even, perhaps, sent to prison. His face was quite haggard as he lifted it to the doctor.

"I simply can't tell, sir. If you like to send me away, you must."

Doctor Colston looked at him searchingly. "If I give you twenty-four hours to decide, will that make any difference?"

Tom hesitated.

"It might, sir, that is, if Harney comes round, and I can have a talk with him."

"Very good." There was relief in the Doctor's voice. "Then I will give you until he is able to speak to you. But after that I warn you that I shall insist."

"Yes," he added. "I fully understand how one boy hates sneaking or tale-bearing about another. But there are cases, and this is one, where the matter is serious enough to threaten the good name of the school. When there is this danger scruples must be laid aside, and the individual sacrifice himself for the common good. Now, you will have your dinner here, and afterwards you can go out to your work as usual. You shall know as soon as Harney is fit to see you."

"Thank you, sir," said Tom gratefully, and with a nod the Doctor left the room.

News of Tom's exploit had spread, and a score of boys surrounded him when he got back to the big schoolroom. But he put them off laughingly, and went to find Nettles and Paddy. He discovered them together in the box-room, which at this time of day was pretty well deserted, and the first thing that struck him was that Nettles' face was graver than he had ever known it.

Tom came up quickly.

"What's up, old man?" was his first question.

Nettles looked up at him, then took a letter from his pocket and handed it over.

"Read that," was all he said.

Tom read it. When he had finished, his face was whiter than Nettles'.

"You're leaving Claycroft?" he gasped.

"I've got to," replied Nettles gravely. "I can't stay here unless my father pays my bills, and if he's got no money left he can't do that."

Tom stared at Nettles with horrified eyes.

"But I don't understand. Who's got the money?"

"This new claimant—my uncle, I suppose he is, though it's the first time I knew I had one. You see he's my father's elder brother."

Paddy looked up suddenly.

"Then you'll have to go, too, Tom," he said, in a broken voice. "Ye'll both go, and what will I be doing without ye? What will I do at all?"

TO BE CONCLUDED

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This working toy model, which shows all the funny things Jumbo catches when he goes fishing, is free TODAY to every boy and girl who buys a copy of "Playtime." Next week a new football game will be given; the week after, a working model of Cinderella's Magic Coach. You must not miss these splendid gifts, which are free with every copy of

PLAYTIME

Every 2nd Wednesday

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Five-Minute Story

Bob's Surprise

"It is a fine walking-stick, isn't it?" said the tall man. "I've seen you admiring it since the first day out."

He handed the gold-mounted, shining cane to the boy, and then told him the tale of killing the rhinoceros in German East Africa during the war.

Bob was travelling to New York with his father and mother, and the ship was due to arrive late in the afternoon. Bob parted with his new friend at lunch, but met him again on deck, and listened with increasing interest to the stories of adventure that Mr. Reginald Aldis rolled out with ease.

"I wish I had known you when the boat started," said the delighted Bob.

"Better late than never," said his new friend, with rather a curious smile.

Mr. Aldis had for some days noticed Bob's admiration. There was no need for him to bring out his rhino stick when walking the deck, but he had a purpose in making the acquaintance of the boy during the last day of the voyage. Bob's father was a person of political importance, Sir Affleston Baker, Bart. His luggage was likely to pass lightly through the customs.

When the great liner was moored Aldis remained talking to Bob. Some of the passengers landed. Suddenly Bob saw his father and mother leaving, but before he could say anything Aldis gave a cry of pain and let his stick fall.

"What is the matter?" said Bob, picking up the stick and handing it to him.

"I've sprained my wrist," said Aldis. "I must have my left hand free to undo my luggage. Take the stick for me, and if I don't see you at the customs I will call at your hotel."

Away rushed Bob. He found his parents, got through the customs, and drove away.

"That's a fine stick you've got," said his father. "Who gave it to you?"

"I wish it were mine," said Bob, "but it isn't. I am keeping it for that East African soldier who told me such wonderful yarns. He sprained his wrist just before he landed."

"Did he?" said the baronet thoughtfully. "Let me have a look at the stick."

He examined the gold mount of the handle, and twisted it strongly to and fro. Then he turned to the ferrule, and found it was fastened by fine small screws, each of which he extracted with the point of his pen-knife. Looking at the natural end of the stick, he saw it was plugged with a core of horn. He turned the stick up, and two handfuls of large, fine diamonds tumbled out.

When Mr. Aldis called for his stick he was told to apply to the United States customs for it. The American duty on diamonds, by the way, is extremely heavy.

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There's the Song of the Thrush when the Skies are Grey



D! MERRYMAN

DINER: "Waiter, this steak is like leather, and the knife is blunt."
Waiter: "You might try stroping the knife on the steak, sir."

Double

This verse was written on a Mr. Wellwood, who was noted for exaggeration.

You double each story you tell,
You double each sight that you see;

Your name's W, E, double L,
W, double O, D.

Queer Arithmetic

FOUR things there are all of a height,
One of them crooked, the rest up-right.

Take three away, and you will find
Exactly ten remain behind;
But if you cut the four in twain
You'll find the half does eight retain.

Solutions next week

Is Your Name Marquis?

NAMES like Marquis, Pope, Knight, and so on, do not imply that the ancestors of those who bear them held these ranks. Authorities agree that they are due to ancestors who acted these parts in the old pageants which were so common in the Middle Ages. A man played the part of a knight or marquis, and was afterwards known as Knight or Marquis.

The Traveller's A B C

Here are some more merry rhymes of the Picture Poet of the Underground Railway. We propose to give others from week to week for the benefit of all who travel in these hard times.



D—Well that is Dally and also friend Dilly,
Who hold up the traffic and make us look silly.



E is for Entrance and Exit in one.
So please hurry off, but wait to get on.



F's the Fine Fellow, so pleasant to meet,
Who to aged or infirm at once gives his seat.

The Countryman in London

A COUNTRYMAN visiting London one day for the first time was amazed at the number of people in the streets.

On his return to the village he was asked what he thought of the great city.

"Oh," said he, "there were a sight of people there! I think there must have been a fair on."

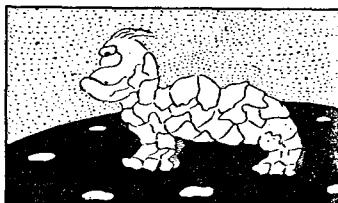
Missing Words

In this verse five words are missing. They consist of the same six letters arranged in a different way in each case. Can you fill them in?

A — sat in his — grey,
Watching the light of the moon-beams play
On a keg that low in the bushes lay.
Thou — the brave and — the strong;
The leaves with a — took up the song.

Solution next week

The Zoo That Never Was



The Jungle Sniff

THE Jungle Sniff, whose skin is white,
Is on some victim's track.
He's simply spoiling for a fight
(But ne'er gets one, alack!).

Lost and Found

"CAPTAIN," said an Irish sailor to his superior officer on a ship that was crossing the Atlantic, "can a thing be lost when ye know where it is?"

"Of course not, Pat," replied the officer.

"Well," said the man, "I was cleaning your watch-chain by the side of the ship when it slipped out of my hand and fell overboard. But I know where it is: it's at the bottom of the sea in that spot."

THERE rushed in at Crewe Station door

A young man to 'catch the 4.4.
Said the guard, "Man alive!
It is now nearly 5!
You should come before 4 for 4.4."

Wax and Whacks

"I'm going to seal a letter, Dick.
Some wax pray give to me."
"I have not got a single stick,
Or whacks I'd give to thee."

Four Kinds of People

A WISE man has described four kinds of people as follows:
He who knows not and knows not he knows not: he is a fool—shun him.

He who knows not and knows he knows not: he is ignorant—teach him.

He who knows and knows not he knows: he is asleep—wake him.

He who knows and knows he knows: he is wise—follow him.

Modern Etiquette

A LADY, having taken back some goods to a draper's shop because they did not quite suit her, was asked by the shopwalker who had served her.

"Was it a gentleman with dark hair?" he inquired.

"No," replied the lady; "it was a nobleman with a bald crown."

ANSWERS TO LAST WEEK'S PUZZLES

The Archbishop's Riddle

To him who cons the matter o'er
A little thought reveals:
He heard it first who went before
Two pairs of soles and eels.

A Picture Lesson in Geography

The village was Hook

A Curious Find

An egg

Puzzle Rhyme

One, none

Who Was He?

The Great Engineer was John Smeaton

Jacko Takes a Short Cut

FATHER Jacko had caught the craze for motoring.

"My dear," he said to his wife at breakfast one morning, "I have hired a car to take you to the seaside for the day."

Jacko gave a wild war-whoop, flung a cushion at the cat, and dashed out of the room to get ready.

"That lad gets wilder every day," remarked his father, digging his fork into his third sausage.

"He's so pleased at the prospect of a peep at the sea again," said his mother, who always took his part.

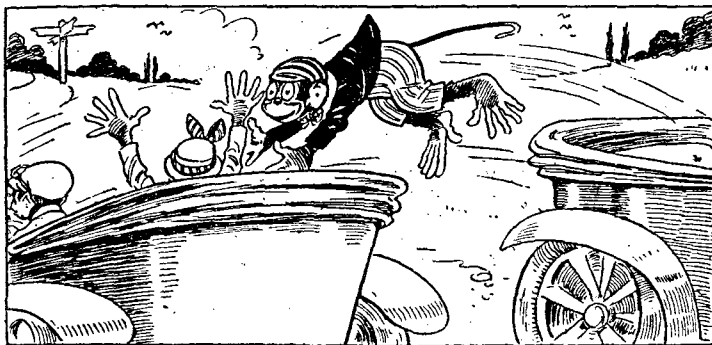
Father finished his breakfast, put on his hat, and went off for the car. In an hour they were off, and everything went swimmingly till an unexpected gust of wind took Mother Jacko's hat and sent it flying over the hedge.

"Stop! Stop!" they all shouted at once—which so flustered Father that he jammed on the brakes, and almost sent them flying over the hedge after it.

"I'll get it," said Jacko, hopping out, and, stooping down, he disappeared from view. He came back in a few minutes with the hat in his hand, and a ferocious-looking dog at his heels.

"What a horrid dog!" said Mrs. Jacko. "Get on, Father; I don't like the look of that dog. Have you been teasing him?"

"It's all very well to say 'Get on,'" exclaimed her husband irritably, before Jacko could answer. "I've stopped my



Jacko took a flying leap

engine, and I can't get it going again." He was bent double in front of the car, with beads of perspiration rolling down his cheeks.

Adolphus got out to see what he could do. But nothing happened. Father took off the bonnet and poked his head inside while Adolphus lay down in the road, very courageously, and wriggled underneath—for it took some doing with that vicious dog looking on.

At last they gave it up, stretched themselves, and stepped solemnly back into the car.

"Most extraordinary!" said Mr. Jacko.

"Strordinary!" echoed Adolphus.

Meanwhile Jacko was getting impatient. Before another word was said a second car swung round a bend of the road and came quickly towards them.

"They're getting along!" said Jacko under his breath. "They're going to the sea!" It seemed to Jacko very doubtful if he ever would.

Suddenly his eyes lit up with excitement as an idea came into his mind. He sprang up on to the seat, and, as the strange car passed theirs, took a flying leap, and landed in the middle of it.

Ici on Parle Français

DEUX CANCRES

Dumas pria un jour le duc de Chartres de prendre à son service un de ses protégés, le nommé Louet. "Ah!" s'écria le duc, "je connais ce cancre: j'étais au collège avec lui." Dumas sourit. Il tendit au duc un papier plié en deux, en lui disant: "Monseigneur, voici sa recommandation." Or, ce papier était un billet que le duc avait fait passer à Louet lorsqu'ils étaient au collège, et dans lequel il le priait de traduire certain passage de l'Énéide. "Louet aura la place," dit le duc. "Je suis encore plus cancre que lui."

Notes and Queries

What are the Dodecanese?

The Dodecanese are a group of twelve small islands in the Aegean Sea, ceded to Italy by the Peace Treaty with Turkey, and since handed to Greece. Dodecanese is a Greek word meaning twelve islands.

What is a Cynic? A cynic is a sneering person, and the name is from the old Cynics, a sect of Greek philosophers who taught contempt for pleasure.

What is the M.C.C.? These initials stand for Marylebone Cricket Club, the premier cricket organisation and authority.

What does Pinx mean? Pinx on a picture is short for pinxit, the Latin for "he painted it," and is followed by the artist's name.

A B C Stories

The Bicycle

B STANDS for bicycle—the bicycle that John's father gave him for his birthday.

It was a proud day for John, and he wanted to have a ride that very minute.

But Daddie had to go to his office, and he couldn't stop to give John his first lesson. That would have to wait.

So John heaved a big sigh and went out into the garden, and wished it wasn't holiday time, so that lessons might make the hours go by more quickly.

He wheeled his pretty, shining present on to the lawn, and stood for some time admiring it. Then he put one foot on the pedal.

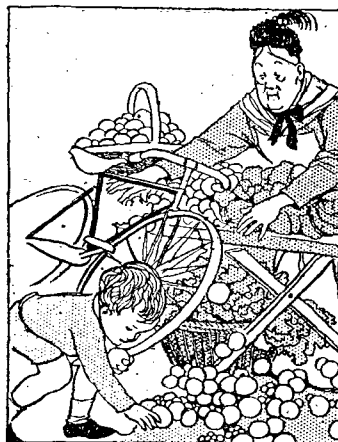
"Don't attempt to get on till Daddie is there to help you," his Mother called out. "It would run away with you."

John didn't believe it, though he was too polite to say so. It looked so simple.

When his Mother was out of sight he took the bicycle outside into the road and wheeled it along till he came to where there was a high kerb. He stood on it, caught hold of the handle-bars, and sprang up on to the saddle.

He was on! He gave a squeak of delight. A kick set him moving, and in a moment John was riding proudly along.

The road sloped a little down-hill, and the bicycle began to go quite quickly. It went too quickly for John, and it seemed to be going in a straight line to Old Betty's apple stall at the cross roads.



He helped to put the stall tidy

He tried to keep away from it, but he couldn't!

Betty saw him coming, and jumped up and waved.

The next minute there was a crash, and John and the bicycle and the apples and the stall were all lying in a heap.

John was ever so sorry, and when he had helped to put the stall tidy again he picked up the bicycle—which, luckily, wasn't hurt—and wheeled it slowly home.

He thought his Mother would be angry, but all she said was, "You always do think you know best, John."

The Children's Newspaper grows out of My Magazine, the monthly the whole world loves. My Magazine grew out of the Children's Encyclopedia, the greatest book for children in the world. The Magazine appears on the 15th of each month, and the Editor's address is: Arthur Mee, Fleetway House, Farringdon St., London, E.C. 4.

CHILDREN'S NEWSPAPER

September 11, 1920

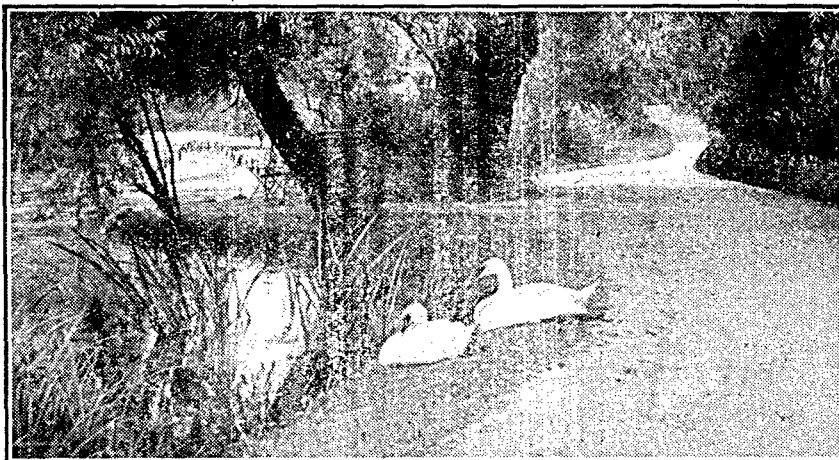
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CHANNEL SWIMMER · BOY AND GIRL HEROES · SCOUTS · KEEP THE CITY CLEAN



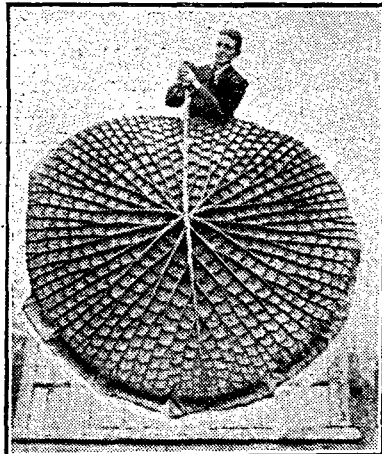
New Channel Swimmer—Henry Sullivan, the American athlete who attempted to swim from Dover to Calais, and almost succeeded



Swans Clear a Pond of Weeds—These swans, presented to the Royal Botanic Society, have cleared a pond in the Regent's Park grounds which became overgrown with weeds after the previous swans escaped a year or two ago



Boy Gives His Life for His Mother—Ellis Snow, aged 16, who was drowned after saving his mother when she fell into the Medway at Teston



Leaf That Suggested the Crystal Palace—The underside of a Victoria Regia lily leaf at Kew. See page 4



The Children's Paradise—Children rowing on the sea lake especially enclosed for their use at Southend



A Sail in a Home-made Boat—A happy youngster at Southend about to go off for a trip in a boat made by her big brother

The picture of the Jolly Miller on page 2 is published by courtesy of the Daily Graphic



Man Who Shot the Tsar—Yankel Yurofsky, who organised the murder of the Russian Imperial family. See page 6



Girl Heroine—Cressy Leach, aged 12, who plunged into the Mersey at Widnes and saved her brother, shown here with her



Preparing for the Coal Strike—A small boy taking home a sack of coals from the coal merchant's in preparation for a possible strike



Keeping the Streets Clean—During a municipal strike at Cardiff Boy Scouts cleared up some of the rubbish that accumulated in the streets, and so helped to preserve good health in the city



A Queer Bridge in Scotland—A wire bridge over a river by which a cottager's family at Glenesk reaches the road from its home